Coping with Change
The problems of adopting sustainable transport policies in the small island state of Malta.

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A dissertation submitted in partial fulfilment of the requirements for the degree of Doctor of Philosophy in University College London, University of London, UK

2006

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Abstract

This study has five objectives. First, to describe the origins and current state of Malta's transport problems. Second, to place these problems in the context of the aspirations of EU transport policy to achieve environmental sustainability. Third, to propose a national land transport strategy that will reduce Malta's dependence on the car and comply with sustainability principles. Fourth, to analyse policy to date and identify the difficulties of achieving a new policy framework, and fifth, to suggest ways in which these difficulties might be overcome. Since Independence from the UK in 1964, Malta has developed steadily. Over recent years, the growing GDP marked an increase in household income and improvements in the standard of living. Therefore spending increased on certain commodities such as the motor car. Over a very short period of time Malta's car ownership has increased to become one of the highest in the European Union with 501 passenger cars per 1,000 population in 2002. This high level of car ownership has led to problems which are all too common to other European cities, such as congestion, parking problems, a decline in public transport and increasing subsidy. A Geographic Information System (GIS) is used to present the current status of the land transport sector in Malta, whilst the sociological institutionalist approach, suggested by Vigar (2002), looks at analysing policy through the past and current networks and discourse. This methodology is complemented by a number of interviews with local policy makers to identify the problems of implementing a sustainable transport strategy. Within a very dynamic environment where most organisational structures are changing, this study suggests ways of introducing policies in the land transport sector consistent with measures suggested in the EU Common Transport Policy. It concludes by looking at the future of sustainable transport policy for Malta.

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Declaration

The work presented in this thesis is my own, unaided work except where acknowledgment is given and has not been submitted for a higher degree in this or any other university.

Maria Attard

Acknowledgements

The greatest benefit to come out of this research was the possibility to discuss transport policy with so many different people, all experts in the field of transport studies. I therefore take this opportunity to thank Prof. Derek Hall for the numerous opportunities to publish work from my research, Prof. Phil Goodwin for being so encouraging, Dr. Marcus Enoch for his comments and overall interest in my work, and Dr. Ian Docherty and Dr. Jon Shaw for giving me the opportunity to present my work at the various events organised by the Transport Geography Research Group at the RGS-IBG. Finally I would like to thank three reviewers; Dr. Graham Parkhurst, Mrs Frances Brown and Mr Karl Donert whose invaluable comments improved this research tremendously.

In Malta, I have found support from a number of people, amongst which Mr Lucien Stafrace at the Malta Environment and Planning Authority who provided most of the data for this research and Mr. David Sutton at the Malta Transport Authority who supported my research by simply being there whenever I needed to discuss something (even though I knew he was always very busy!). Other people who I would like to thank for their support are Mr. Joseph Grioli, Managing Director of Vodafone (Malta) who believed in me and sponsored the first year of my research, Prof. Charles Farrugia, Pro-rector at the University of Malta, whose support in the following years made the completion of this research possible, Dr. John Schembri, friend and colleague at the University of Malta, Dr. Paul Gauci, friend, boss and eventually colleague also, at the University of Malta and finally, Mr Mario Falzon, CEO of the Malta Transport Authority whose availability gave this research a whole new perspective.

The encouragement and interest shown by all these colleagues and friends made this research easier to pursue. That it has been completed however, is due primarily to the support of three people. First, my supervisors, Prof. John Adams and Prof. Mike Batty who provided much useful advice, criticism and above all, encouragement. It has been a privilege and a pleasure to work under their supervision. Second, my husband, Peter, who was tremendously supportive throughout the whole length of this research, especially during the hard times when I was writing up or getting too many things done at the same time. Also, the fact that I spent a lot of time away from home and when at home, spent a lot of time with my research, is testimony to his love, patience and support.

Finally I will never forget (Dr.) Carolina Tobon, (Dr.) Daryl Lloyd, (Dr.) Muki Haklay, (Dr.) Paul Torrens, Ian Greatbatch, Ita Macdonnell, Mark Thurstain-Goodwin, Sonja Curtis and all in UCL's Geography Department and CASA whose friendship made my visits to London a great experience.

1.0 Introduction

Malta joined the European Union in May 2004. In the period of transition leading to EU membership the islands dealt with the necessity of complying with the EU *Acquis* (EU law) and the requirements of accession. Since July 1990, when Malta formally applied for European Community membership, and the favourable opinion (*avis*) by the European Commission in June 1993, EU-Malta relations have increasingly been oriented towards the goal of accession. Land transport policy is something that will also need to change. Even though Malta as an island state is unique in terms of geography, policy structures and their implementation, it has to deal with problems in common with other European countries. Amongst the most important of these is increasing car dependence. This study therefore proposes five objectives:

1. **to describe the origins and current state of Malta's land transport problems**
2. **to place these problems in the context of the aspirations of EU transport policy to achieve environmental sustainability**
3. **to propose a national land transport policy framework that will reduce Malta's dependence on the car and comply with sustainability principles**
4. **to analyse policy to date and identify the difficulties of achieving a new policy framework**
5. **to suggest ways of overcoming the problems of successful implementation**

Malta has joined a Union which has accepted the concept of sustainability. The EU Transport Council adopted in April 2001 the following definition of a sustainable transport system (European Commission 2004). It

- *"allows the basic access and development needs of individuals, companies and societies to be met safely and in a manner consistent with human and ecosystem health, and promotes equity within and between successive generations;*
- *is affordable, operated fairly and efficiently, offers choice of transport mode, and supports a competitive economy, as well as balanced regional development;*
- *limits emissions and waste within the planet's ability to absorb them, uses renewable resources at or below their rates of generation, and, uses non-renewable resources at or below the rates of development of renewable substitutes while minimising the impact on the use of land and the generation of noise."*

This definition was prepared for a European Commission communication entitled *Towards a thematic strategy on the urban environment.* It is a definition that begs many questions. "The basic access and development needs of individuals, companies and societies" have yet to be defined. Agreement remains to be reached amongst scientists about the planet's ability to absorb emissions, and about the availability of energy and the likely development of substitutes. But the most intractable problem with this definition is the lack of an understanding about how the continuing development of a "competitive economy" can be reconciled with a reduction in transport pressures on the environment. Many policies described as sustainable might be more honestly and accurately labelled "less unsustainable". This will be tackled in detail in Chapter 4 of this study.

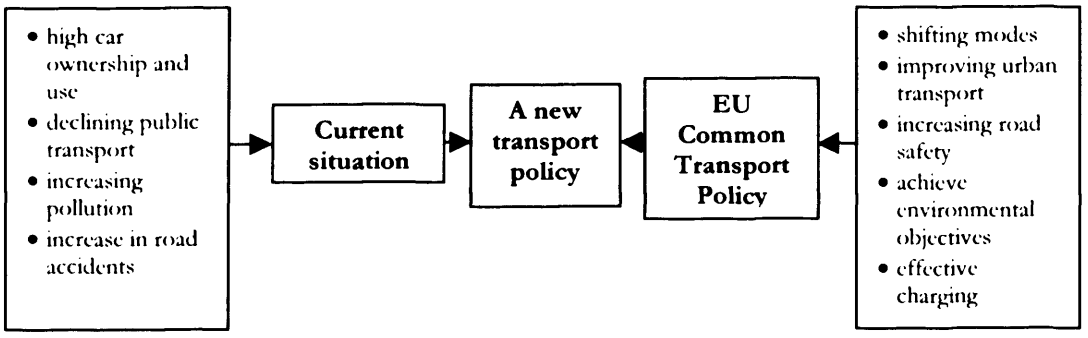
Malta has developed steadily since Independence in 1964. Its GDP has increased at an average rate of 4 per cent per year over the past decade. This was marked by an increased household income and an increase in the number of commodities purchased, amongst which is the private car. Over a very short period of time Malta's car ownership has increased to be amongst the highest in the European Union with 501 passenger cars per 1,000 population in 2002 (National Statistics Office 2002a). This high level of car ownership has led to congestion, parking problems, environmental degradation, public transport decline, increased mobility and urban sprawl.

The European Union transport *acquis* is a list of Council regulations, directives and decisions which the accession countries have to adopt in their legal systems, mostly dealing with harmonisation of national procedures on the carriage of goods, driver training, testing and licensing, and vehicle standards. More importantly the 2001 EU Transport White Paper proposes a number of measures that have wider implications for Maltese national transport policy. The most relevant are:

- improving the quality of the road transport sector by upgrading the Trans-European Transport Network and improving road safety
- adopting a policy on effective charging for transport (internalising costs)
- developing high-quality urban transport
- putting research and technology at the service of clean, efficient transport
- developing medium and long-term environmental objectives for a sustainable transport system

High levels of car dependence and the need to participate in the adoption of the EU Common Transport Policy are acting as driving forces of change in the land transport sector. Figure 1.1 describes these forces acting simultaneously on the Government to provide the islands with a suitable policy framework.

Figure 1.1 Driving forces of change in the transport policy for Malta.



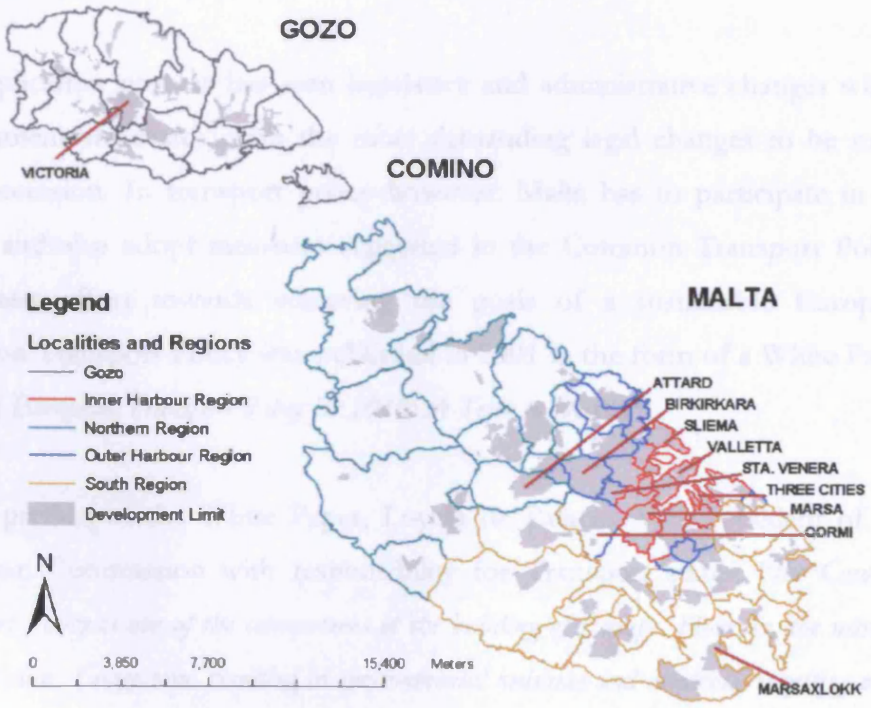
1.1 Increasing car dependence and the need for a new sustainable transport policy framework

Malta is made up of three major islands, Malta, Gozo and Comino, with Malta being the largest island covering an area of 246 square kilometres. These islands are strategically located in the middle of the Mediterranean between Sicily, Tunisia and Libya, but the closer proximity to the island of Sicily, the historical background of the islands and their culture, suggest a European society. Being part of the Commonwealth and a former British colony, Malta has a lot in common also with the UK. Nevertheless, since it is a small isolated island state, certain situations are unique, the most obvious being that land use and transport developments are constrained by limited space. Local and international experts suggest that, because of its small size and isolation, the land use and transport problems facing Malta and other small island states are easily resolved. This study will suggest otherwise. Just like in many other larger countries, policy is not driven by geography but by politics, and therefore implementation is a difficult and slow process.

Malta has managed to grow into a functioning market economy and according to the EU progress report (European Commission 1999), it should be able to cope with competitive pressures and market forces within the EU provided it continues with industrial restructuring (Hall 2000). The growth in economic development has been accompanied by a large increase in the population (9 per cent increase, to 397,296, between 1990-2002). Alongside the pressure of increasing population, suburban sprawl has occurred at a very fast rate. It is estimated that, between 1967 and 1995, a 350 per cent increase in the built-up area occurred in the islands (Cilia 1995). The development that took place over this period was associated with sprawl from the Inner Harbour Region out to the central, more rural parts of the islands. This was aided by the road infrastructure already present, linking most of the villages. It became evident, with the *Structure Plan for the Maltese Islands* (1992), that restrictions on building and sprawl were necessary and so land use planning was introduced in the early 1990s. Development limits were set around the urban agglomeration

surrounding the Grand Harbour and for each and every individual locality. The present built-up areas and local council boundaries are represented in Figure 1.2.

Figure 1.2 The Maltese Islands – limits of development, local council boundaries and major towns and cities.



The importance of transport as a tool for economic development, and land use planning as a measure to control mobility, were mentioned in the *Structure Plan for the Maltese Islands* in 1992, but no policies to control car use were actually implemented. Despite the rapid increase in motorization and car dependence over the past fifteen years, not much has been done to reduce their impacts.

Malta's development has occurred in the context of a foreign policy that promoted closer relations with the European Union. Following Independence

from the UK in 1964, Malta signed an Association Agreement with the European Community in December 1970. This agreement came to force in April 1971, and covered trade-related issues, legal harmonisation and other areas of co-operation, including industry, environment, transport and customs (European Commission 2000). After formally applying to join the European Union in 1990 and closure of all chapters of the negotiations in December 2002, Malta became a full member in May 2004.

The application process has seen legislative and administrative changes within Government structures, with the most demanding legal changes to be made upon accession. In transport policy however, Malta has to participate in the debate and also adopt measures suggested in the Common Transport Policy. The latest effort towards achieving the goals of a sustainable European Common Transport Policy was published in 2001 in the form of a White Paper entitled *European Transport Policy for 2010: A Time to Decide.*

In the preface to the White Paper, Loyola de Palacio, Vice President of the European Commission with responsibility for Transport states, "*the Common Transport Policy is one of the cornerstones of the building of Europe. However, the warning signs are clear. Congestion, resulting in environmental nuisance and accidents, is getting worse day by day, and penalising both users and the economy. If nothing is done, the cost of congestion will, on its own, account for 1% of the EU's gross domestic product in 2010 while, paradoxically, the outermost regions remain poorly connected to the central markets. Europe must bring about a real change in the Common Transport Policy. The time has come to set new objectives for it: restoring the balance between modes of transport and developing intermodality, combating congestion and putting safety and the quality of services at the heart of our efforts, while maintaining the right to mobility*" (European Commission 2001).

This new White Paper recognises where the problems lie and indeed is frank in admitting failure and taking responsibility for the mixed performance of the Common Transport Policy until now (Schmidt 2001). It is more comprehensive than the White Paper of 1992 and related Action Plans and tackles issues such

as road pricing and the balance between modes, in trying to solve both congestion and environmental problems facing transport.

The need for change in Malta's transport policy framework is evident, both in response to the local transport problems and also because of its new international obligations. This study provides for the first time a comprehensive overview of the land transport situation in the islands and a policy framework based on priorities and set within available resources. Policy will be analysed historically using a sociological institutionalist approach, whilst policy perceptions will be captured through interviews with major stakeholders in the sector and a discussion workshop, organised in Malta in May 2002, for policy makers and the public on the future of land transport policy. The problems hindering the successful implementation of necessary policies will be listed and ways of overcoming them will conclude this study.

1.2 Structure of the Study

The structure of this study follows the five objectives stated earlier in this chapter. In describing the origins and current state of the transport problem in Malta, Chapters 2 and 3 present an overview of the islands and the land transport issues (objective one). It is here that, for the first time a comprehensive synopsis of the land and transport developments in the islands is produced. This effort is particularly important as it sets the scene for the understanding of the local situation and the future developments proposed in this study.

Chapter 2 explores the historical development and the institutional changes in Malta. It concludes by looking at the EU accession process, particularly focusing on the transport sector. First, the population and settlement growth, the economic development and the transport system are discussed in order to explain the present urban morphology. The environmental and social impacts of such developments are also discussed in the light of increasing car ownership

and use. Second, the institutional structures are defined, in particular, the responsibilities of the Ministry for Transport and Communications and the Malta Transport Authority. Other stakeholders and their roles in transport policy are also identified.

Chapter 3 looks closely at the elements which make up the land transport system in Malta. It gives a detailed overview of the road infrastructure, performance and traffic distribution across the island. Then the true costs of transport are discussed in the light of EU policy to internalise the external costs of transport. It therefore looks at the only form of road charging in place in Valletta, the capital city. Finally, it analyses the public transport infrastructure, that is, the bus network, its structure, organisation and levels of patronage and other modes of public/private transport. It is the author's belief that, because of Malta's small size, relatively small population and limited resources, the bus service is the most appropriate, sustainable and cost-effective mode of public transport (particularly when compared to other fixed line systems which are very expensive and require relatively large open spaces or underground tunnelling). Even though other modes of public transport are sometimes mentioned, this study assumes the bus service to be the only public transport means available for the islands.

The Maltese case study, presented in Chapters 2 and 3, is followed by a discussion on 'sustainable' transport policy in a wider context in Chapter 4 (objective two). The issues surrounding the term sustainable mobility are also discussed in terms of its relevance to Malta. Car dependence and mobility are also defined and explained in order to understand the problem at hand. International and European perspectives on transport policy are reviewed with particular attention to the European Common Transport Policy. Public opinion is also assessed to understand the acceptability of sustainable transport both locally and at European levels. The next section deals with the true costs of transport, the various methodologies available for measuring the external costs

and internalisation measures in place to date. The EU's approach to internalisation is also discussed in view of its current policy commitments.

The leading concept in this study is sustainability and much emphasis is placed, within the context of the small island of Malta, on the importance of buses in promoting sustainable mobility. An overview of the importance of bus services and the various operations across Europe is given in this section. A comparison between various European countries and the UK experience will demonstrate that, despite some improvements, public transport has not managed to reduce ever-increasing private car use.

Chapter 5 discusses methodology and the adoption of the sociological institutionalist approach for policy analysis. The present study is set in the context of policy networks, arenas and discourse analysis. The methods used to analyse policy discourse are discussed in terms of the literature review, stakeholder interviews and public workshops. In addition to this, the chapter looks at the techniques of visualising transport data using Geographic Information Systems (GIS) and the method of collating data from various organisations to build a land transport GIS for Malta. The chapter concludes with a discussion of the problems encountered whilst collecting and preparing the data, which include the reactions of the stakeholders to the application of GIS to transport and the issue of data error.

Chapter 6 proposes a national land transport policy framework for Malta: the third objective of this study. This chapter identifies the priorities for sustainable mobility within the local context, where financial and human resources are limited. The policy priorities suggested in this chapter are summarised as follows:

1. Achieving modal shift
2. Increasing safety for all road users, including pedestrians and cyclists
3. Improving urban transport and introducing fair pricing

4. Integrating land use and transport planning
5. Investing in research, monitoring and enforcement

Measures to achieve these priorities are discussed in detail in the second part of the chapter. The main recommendations are the possibilities to internalise the external costs of transport, with a proposal to revise the current Valletta scheme and improve the bus service. A new public transport model of operations and a new network structure are proposed to attract more users to the system. Integration of land use and transport planning is also a major recommendation to achieve the policy objectives. Workplace Travel Plans are therefore suggested to reduce peak hour congestion.

Chapter 7 deals with the analysis of policy from the perspective of the various policy networks, arenas and discourse in Malta. The objective is to identify the problems of implementing a new transport policy (objective four). The sociological institutionalist approach is adopted in the first section of this chapter by analysing the current policy arenas and networks for transport in Malta. The policy discourse analysis is then divided between the literature regarding policy and planning, interviews with major stakeholders and discussions of two public workshops in Malta. The last section of this chapter identifies the problems of adopting the proposed transport strategy. These are:

- lack of proper and accurate information
- lack of professionals in the field of land transport planning
- Malta's two-party political situation
- high status associated with the car
- organisational fragmentation
- lack of investment in public transport infrastructure and professional development
- funding problems

Chapter 8 concludes this study by summarising the key findings and suggesting ways of overcoming the problems identified in Chapter 7. This chapter concludes with the way ahead for sustainable transport research, particularly for small island states.

This study presents an insider's view of the land transport situation in Malta. Despite the advantages of this position, a number of concerns were raised during the course of this study and had to be taken into consideration. Most important was the approach to criticism, both of particular situations and individuals. It was therefore felt essential to present a general overview rather than personal views where these were deemed to reflect too negatively on the individual or the organisation.

2.0 The Islands in Transition

Malta experienced an accelerated rate of urban development and socio-economic change during the past quarter century, with constant economic growth. It also joined the European Union in 2004 with a complex land use distribution, booming building and tourism industries, increased employment and increased salaries. This resulted in rising individual disposable income, with increased spending on commodities. This was particularly the case with respect to car ownership and use. The *Structure Plan for the Maltese Islands*, the only legal planning tool, published in 1990 and approved by Parliament in 1992, stated that Malta was still not car dependent. Today, however, Malta has high car ownership and, given the limited land space and high population density, it is facing all the major transport problems found in other urban areas around the world, such as high traffic volumes, peak-hour congestion, parking problems in town centres, air and noise pollution, increasing road traffic accidents and declining public transport service and patronage.

This chapter will outline this transition, the environmental impacts of such development and the current institutional and legislative set-ups. This will introduce the reader to the origins of the current issues in land transport discussed in Chapter 3.

2.1 A brief history of change

Malta is situated about 96km south of Sicily, 290km east of Tunisia and 354km north of Libya. The total area defined as built-up on the three major islands increased from 21.40 per cent in 1997 to 21.97 per cent of the total land area in 2000. The length of the road network in 1997 was 1,971km and increased to 2,254km in 2001. There are a number of other uninhabited islands sharing an

area of 0.13km², amongst which are Filfla, a protected nature reserve, St. Paul's Islands and Fungus Rock (Cilia 1995; National Statistics Office 2001a).

2.1.1 The population and settlement distribution

Malta's colonial history influenced the settlement distribution and urban population growth during different periods in history. The islands were occupied by several colonial powers between the 7th century BC and Independence in 1964 (Table 2.1). The initial settlements developed inland because of fear of invasion and attack from the sea. This changed with the arrival of the Knights of the Order of St. John and the building of the walled cities in the 1500s. The population began living closer to the sea, making full use of the Grand Harbour and its excellent natural docks. This led to an increase in population in the Grand Harbour area namely; Valletta (the capital city) and the Three Cities of Birgu, Bormla and Isla. Following a short period of French rule, the British continued to use Malta as a naval base, utilising its full geo-strategic position in the Mediterranean. During the heavy air bombing in the Second World War, particularly in the Grand Harbour region, many families moved out of Valletta and settled inland, leaving behind only the very few poor people who could not afford to move from the area and the dock workers' families who were constrained to reside close to their workplace.

The growth in population and transport accessibility following the war saw an increase in the urban sprawl and number of dwellings across the islands (Figure 2.1). Tables 2.2 and 2.3 show the percentage growth of the urban area and the approximate age of dwellings in Malta over the past century.

Table 2.1 A brief history of the colonial powers in the Maltese Islands. Compiled by the author.

Colonial Rulers	Date of conquest
The Carthaginians (Phoenicians coming from Carthage) colonised the islands and co-existed peacefully with the Greeks who were already on Malta.	7th – 8th Century BC
The Romans conquered Malta in the Second Punic War.	218 BC
Byzantines took over the islands around this time.	6th Century
Although the Arabs conquered the islands, it is evident that they did not impose their customs on the Maltese.	870
Roger the Norman conquered Arab Malta.	1090
Malta draws closer economically to Sicily and Aragon after the Sicilian Vespers.	1282
Charles V gave Malta as a gift to the Order of St. John who temporarily accepted to settle. They eventually settled permanently and Malta flourished under their rule.	1530
Napoleon, on his way to Egypt, wished to enter the Grand Harbour and in the process he also overthrew the Order.	1798
After seeking assistance from Sicily and Britain against the French, Malta fell under British rule with Sir Alexander Ball becoming the first civil administrator.	1802

Table 2.2 Built-up areas for the Maltese Islands, 1910-2001. Source: Cilia, 1995; National Statistics Office, 2001a.

Year	Built-up (in km²)	% of total land area
1910	11.3	3.62
1957	12.2	3.91
1967	16.0	5.14
1985	43.2	13.84
1988	45.2	14.48
1995	49.9	15.98
2001	73.4	21.97

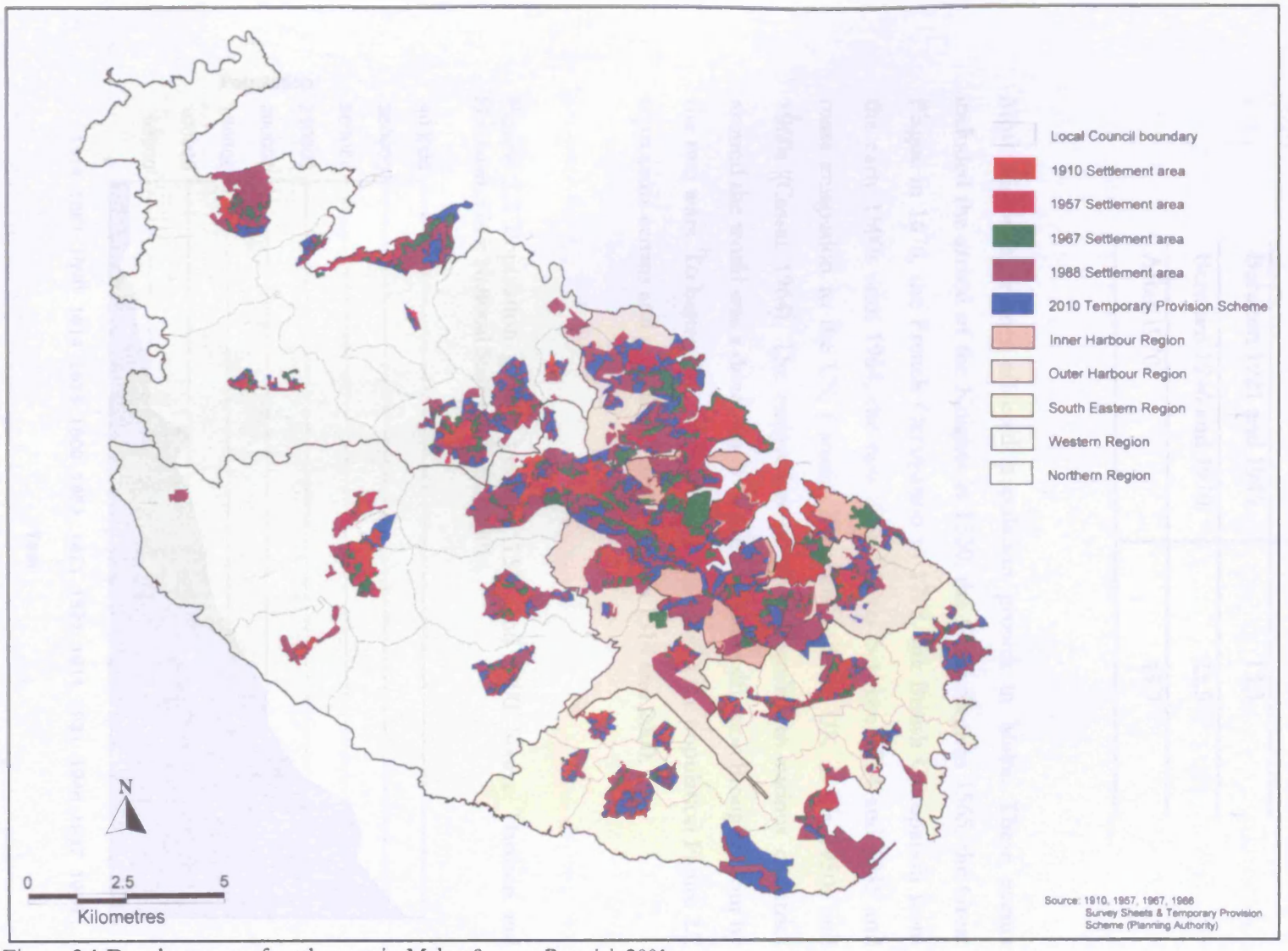


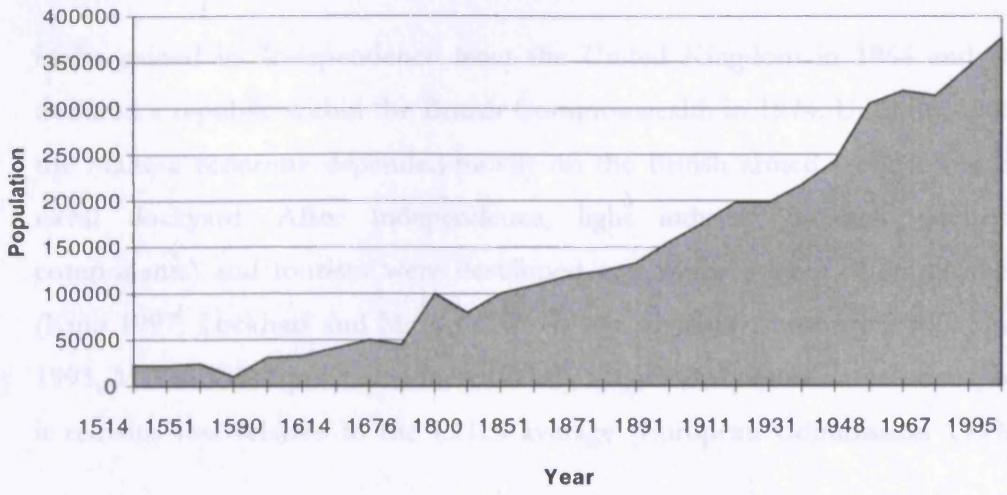
Figure 2.1 Development of settlement in Malta. Source: Bonnici, 2001.

Table 2.3 Approximate age of dwellings. Source: Central Office of Statistics, 1998.

Approximate age of dwellings (% of total dwellings amounting to 119,479 in 1997)	
Before 1921	17.3
Between 1921 and 1945	13.3
Between 1946 and 1970	23.5
After 1970	45.9

Most historical events affected population growth in Malta. These events included the arrival of the Knights in 1530, the Great Siege in 1565, the Great Plague in 1676, the French Occupation in 1798, the British Occupation from the early 1800s until 1964, the two World Wars between 1914 and 1945 and mass emigration to the US, Canada, Australia and the UK in the 1950s and 1960s (Cassar 1964). The emigration of whole families to various countries around the world was a direct result of the economic situation brought about by the two wars. To better understand the fluctuations in the population Figure 2.2 represents census and population data between 1514 and 2000.

Figure 2.2 Population growth between 1514 and 2000. Source: Harrison and Hubbard, 1945; National Statistics Office, 2001a.



The population in 2002 amounted to 397,296 of whom about 28,000 lived in Gozo, while a few farmers inhabited Comino. The population density was 1,257 persons per km^2. The islands' recent natural demographic growth rate is still high, even though in the last two censuses it is evident that the growth rate is reducing. Couple this with a life expectancy of 80.1 years for women and 74.4 for men (European Commission 1999c), and you have the historic, yet increasingly critical theme of the islands' finite land and space resources against the increasing population and transport pressures (Attard and Hall 2003).

2.1.2 Economic growth

During the late 1980s economic development was occurring steadily whilst the size of the average Maltese household was still high, with 25 per cent of households having 4 persons and 12 per cent having 5 persons (National Statistics Office 2001a). Employment was increasing and so were standards of living. Following 1995, the total number of births started to reduce, with the birth rate decreasing from 13 per year in 1996 to 11 in 2000. The distribution of household size shifted to include 24 per cent of households having two persons in 2000 (National Statistics Office 2001a). This could be attributed to many women joining the work force; they increased from 18 per cent of the total labour supply in 1960 to 28 per cent in 1998, part-time employment excluded (Camilleri 2000).

Malta gained its Independence from the United Kingdom in 1964 and was declared a republic within the British Commonwealth in 1974. Until the 1960s, the Maltese economy depended mostly on the British armed services and the naval dockyard. After Independence, light industry (textiles, electronic components) and tourism were developed as a major source of employment (King 1997; Lockhart and Mason 1989; Malta Tourism Authority 1999). Since 1993, Malta's GDP per capita increased by about one quarter in real terms, but it remains low relative to the EU15 average (European Commission 1999a).

Table 2.4 represents the annual GDP growth rates and GDP per capita for selected countries.

Table 2.4 Annual GDP growth rates and GDP per capita. Source: TINA Vienna, 2002.

	GDP growth rates					GDP per capita
	in %	in %	in %	in %	in %	in EURO
	1996	**1997**	**1998**	**1999**	**2000**	**2000**
Malta	4.0	4.9	3.4	4.1	5.4	10,030
Cyprus	1.9	2.5	5.0	4.5	4.8	14,290
Estonia	4.0	10.4	5.0	-0.7	6.9	3,810
Turkey	7.0	7.5	3.1	-4.7	7.2	3,230
CC13 (average)[1]	5.0	4.7	2.9	0.0	5.0	3,600
EU15 (average)[2]	1.6	2.5	2.9	2.6	3.3	22,500

[1]CC13 are the candidate countries who have applied to join the EU
[2]EU15 are the member states.

Malta has attracted more than a million tourists every year since the early 1990s. Until the mid-1980s, resort-based mass tourism, largely from the UK market, reinforced Malta's role as a sun, sand and sea destination, with the peak tourist season being summer and early autumn. This seasonality has heightened pressures on the country's infrastructure; especially energy supply, water quality, waste disposal and transport provision (Lockhart 1997). It has also generated mixed responses from the Maltese themselves (Secretariat for Tourism 1993; Planning Authority 1997a; Malta Tourism Authority 2000; Bramwell 2003). But this factor is complicated by:

- the increasing rate of retirement in-migration, particularly from the UK, with migrants being both participants in, and recipients of, visiting friends and relatives tourism (Williams et al. 2000);
- the difficulty of identifying tourism as an agent of change amongst a range of 'modernisation' factors;

- new housing appearing to have contributed much more to land-take than has new tourism development (Ministry of Tourism 1999; Malta Environment and Planning Authority 2001);
- the further complication that an unquantified number of new apartments and houses are used by Maltese as second homes, by returning émigrés, by international tourists, and by retirement in-migrants.

The resurgence of international tourism in the later 1990s was also strengthened with the decision of one of the world's leading cruise operators to use Valletta as a hub port from 1999. Although the Maltese economy was not significantly affected by the turbulence in the international financial markets during 1998/1999, the country's high dependence on tourism and a limited number of export products renders its economy vulnerable to shifts in international demand, such as the downturn in air travel following the attacks on the World Trade Centre and the Pentagon in September 2001. The attacks resulted in a reduction of nine per cent in the winter months of November to February 2001/2 when compared with the same period for 2000/1 (Malta Tourism Authority 2002).

These socio-economic changes brought about in the 1980s and 1990s resulted in an increase in the general standard of living, reflected also by an increase in household disposable income (HDI) over the past decade (Table 2.5). This had a major effect on the types of commodities households invested in. It is estimated that, in 2001, circa €34 million was spent on the purchase of new cars alone (Attard 2002).

Table 2.5 Household disposable income, 1989-1998. Source: Malta Environment and Planning Authority, 2001.

	1989	1990	1991	1992	1996	1994	1995	1996	1997	1998
Disposable Income (€ million)	1165	1283	1404	1489	1613	1729	1889	2038	2113	2289
Per cent increase per annum	-	9	9	5	8	7	9	7	3	8

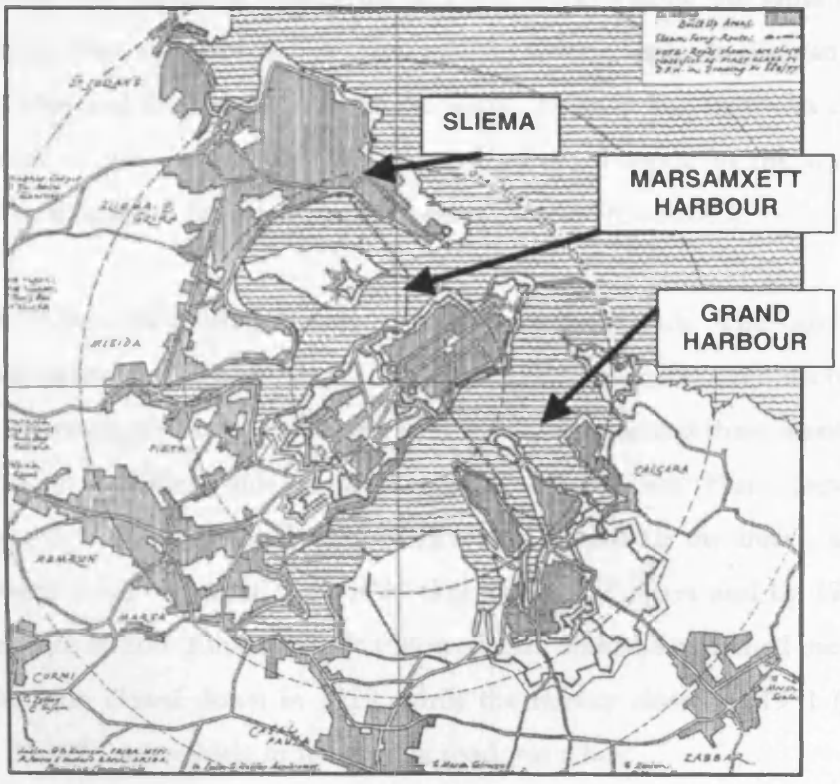
2.1.3 The land transport system

Following the war and still under British rule, urban growth and the development of the transport network in Malta became closely related. The development of the transport system is very evident in the patterns of settlement growth, where specific periods related to the development of particular modes of land transport can be traced. The four 'eras' dedicated to different modes of transport outlined by Newman and Kenworthy (1996) - that is walking, rail, mass public transport and the advent of the car - are evident in the island's development pattern. The development around the Grand Harbour grew along primary routes, following first the railway tracks and the fixed tram lines, and later the surfaced roads. This pattern of development was already evident in 1945 when Harrison and Hubbard prepared a report for the Government of Malta entitled *Valletta – A report to accompany the outline plan for the region of Valletta and the Three Cities.* This report covers various aspects of development in Malta, including both the urban areas and the transport system. It focuses on the area closest to the Grand Harbour, the 2-mile cordon including suburbs such as Sliema, Hamrun, Marsa, Paola, Tarxien, Msida, Kalkara and St. Julian's (Figure 2.3). In the mid-1940s, three quarters of the population of the island lived within the walled cities, that is Valletta and the Three Cities on the southern side of the harbour, whilst the rest lived in the suburbs and outskirt villages (Harrison and Hubbard 1945).

The road system around Valletta outlined by Harrison and Hubbard in 1945 is still evident today (Figure 2.3). In the same report they stated that Malta would probably never require an elaborate and rigid classification of streets, but the basic principles in the classification cannot be ignored. *"[As a result of] the hundreds of streets demarcated in direct response to the pressing demands of those anxious to be provided with sites for houses, through traffic, has as a rule, been left to find its way as best it can through streets too narrow and ill-aligned satisfactorily to accommodate it"* (Harrison and Hubbard 1945). They suggest that the inefficiency of the road system in the region is the result of a total disregard of one basic principle, that is, whenever a street is added to the road system it should be provided for a specific purpose. However, much of the road building was done because of political pressures.

In the late 19th Century, the predominant mode of transport between towns and villages was walking. The rich, however, travelled by horse or carriage. Transport systems consisted of poor networks between neighbouring towns. Villages at that time were mainly self-sufficient and people living there did not undertake long distance travel for services or shops. Coastal areas within the Harbour region benefited from the ferry service, mainly between Marsamxett Harbour and Sliema. This contributed greatly to the growth and development of towns such as Sliema. Vessels left every 15 minutes with a journey-duration of 15 minutes (Lanfranco 1999).

Figure 2.3 Existing communications in the region. Source: Harrison and Hubbard, 1945.



The further development of the retail and service sectors in Valletta, already the site for the islands' administration, resulted in an increase in the transport services provided to and from it. By 1870, however, the transport system in Malta was still underdeveloped. In Europe the railway was the means of mass travel and the Industrial Revolution was underway in many parts of the continent. Malta's geographical position and political connections attracted a lot of shipping and capital investment. Therefore, after considerable planning, the investment in mass public transport resulted in the building of a railway in 1883. Today, the rail tracks have been converted to roads and the former railway station under Mdina is a restaurant/museum. Quite a number of years passed before people understood the efficiency and benefits that the railway yielded. Not surprisingly, suburban development occurred along the tracks.

In the early 20th century the tramway was introduced in direct competition with the railway. The tramway, established in 1905, worked along the same lines as the railway, but could access the town centres more deeply. It also ran to the Three Cities and the central parts of the island. Because the tram was cheaper and easier to use, people travelling by rail switched mode to the tram and created new demand for other places to be serviced (Attard 2000).

By the 1920s, scheduled bus services began in the islands. The bus service provided an increase in both accessibility and service. The first ever bus to run a service started in 1904. By 1922 there were 50 omnibuses and these managed to serve more localities with greater efficiency. Even the Ferry Service at Marsamxett Harbour was affected by the introduction of the buses, as ferry usage went down drastically. By 1926 there were 108 buses and by 1930 the number rose to 500 (Ellul 1967). It followed that, with the increased use of the bus, the tram closed down in 1929, while the railway closed in 1931 (Sutton 1998). By 1933 one vehicle in five on the road was a bus.

The inter-war years witnessed in Malta, as elsewhere, a remarkable revolution in the modes of transport. The closing down of the railway was a direct consequence of the increase in motor vehicular traffic. While the number of horse drawn cabs (*karrożini*) fell from 2,000 to 1,000, the number of internal combustion engine vehicles rose from 300 to 6,000 and public motor buses from 40 to 600. As a consequence, the need for direct and adequate thoroughfares became much more widely appreciated, and attempts were made to provide them. But, in the absence of a comprehensive plan, all such attempts were in vain. The streets that were created in this period did not constitute an efficient road system, as defined earlier by Harrison and Hubbard (1945).

After the Second World War, land use decisions taken by the government of the time, such as the building of new residential areas, affected the transport network directly. Urban development required transport facilities and therefore new road infrastructure. An increase in road-based travel brought about inter-

village movement (including to and from Valletta, which remained the principal origin and destination of traffic). The network, focusing on the main terminus in Valletta, developed for the bus service is still present today around the Grand Harbour Area.

Between 1950 and 1970 the bus service was very successful because car ownership was low. Until the 1970s Malta had a very low level of car ownership, one of the lowest in the developed world, and buses carried 60 million passenger-trips per year (Ellul 1967). All this changed when, in the early 1980s, rapid economic development brought about improved standards of living, increased mobility and eventually increased private car ownership. There was a 116 per cent increase in the number of vehicles between 1985 and 2000. With 193,784 private cars in 2001, Malta had one of the highest rates of motorization in Europe, second only to Italy (Eurostat 2002).

Modal choice has changed dramatically in just over a decade. Malta's private car ownership level by 2000 was 0.5 cars per person. Annual average car-kilometres per car were estimated from a survey conducted by the Malta Transport Authority at 9,000km. This is almost five times the length of the road network in Malta (Attard 2002). According to the Transport Planning Unit of the Malta Environment and Planning Authority, car usage increased from 55 per cent to over 70 per cent of all trips during the 1990s (Xuereb 1999). During this time, bus fares were increased on four occasions by a total of 250 per cent; first in 1991, then again in 1993 and 1995 with the introduction of a new zoning system, and finally in 1999, marking the largest single historical fare increase (Sutton 2000). Even so, the bus fares remain extremely cheap compared with European standards, with the highest bus fare for a single trip, on a special direct service linking one side of the island to another, at €1 and 46 cents for a regular single 30km trip (Sutton 2003).

Evidence from the Household Travel Survey conducted by the Transport Planning Unit in 1998 shows that the private car is the dominant mode of travel

for both workplace and shopping trips, and it has almost reached the levels of public transport use in education-related trips (Malta Environment and Planning Authority 2001).

Public transport has suffered a 10 million-trip decline over the period 1989 to 1999 (Table 2.6) and is now about half its peak in the early 1970s. Apart from the reduced patronage resulting from the increase in the use of the private car, there were other factors, which marked a decline in the use of scheduled bus services. The introduction of different types of public transport vehicles on private contracts, such as private coaches and minibuses on private hire for industrial estates and schools, increased the number of service providers in a limited and decreasing market. However, the fact that the use of day-rider and weekly tickets was never monitored could also have reduced the number of trips recorded. Sales figures are only available for these tickets, which are more expensive and are only used by tourists, who make up an estimated 27 per cent of the total bus patronage in Malta (Malta Tourism Authority 2000). The lack of monitoring therefore could impact the number of recorded passenger trips.

Since 1995 the scheduled bus service in Malta has been heavily subsidised by the government to guarantee a minimum income to bus drivers/owners. This is referred to as the Revenue Deficit Subsidy under the Guaranteed Earnings Scheme, and since bus operators provide a national (social) service, EU competition law does not apply. The bus operators in Malta are therefore guaranteed an income whether they operate a certain number of bus-kms, or try to promote the use of public transport, or not. They use the monopoly held under public service obligations, and through the Public Transport Association which represents all the bus owners, to pressurise Government into increasing fares, setting routes and increasing the subsidy. Because it is a public service obligation, the European Commission will require more accountability and regulation of the subsidy amount given to the bus owners annually through a new Authority already set up in late 2002. Subsidies range from €1.5 million in 1996 to €2.8 million in 1999 (Grech 2001).

Table 2.6 Public transport patronage and private car ownership, 1990-2000. Source: Attard and Hall, 2003.

Year	Public transport patronage (trips per year)	Percentage change	Private car ownership	Percentage change
1990	40,000,000		104,863	
1995	36,800,000	-8	142,450	+26
2000	31,500,000*	-15	182,105	+22

*estimated

This situation does not augur well for re-investment in public transport. The 508 buses currently licensed for public service use are old, with some having their chassis and bodywork dating back to the 1930s. In 2002 the government devoted €9.6million in subsidy for the purchase of 104 new low-floor buses. This issue was discussed for seven years before the final decision was made, and there are still disputes between the Association (the operators) and the Malta Transport Authority (the regulator) on extending the subsidy to replace more buses. Other disputes on an operational level hinder the modernisation of the scheduled bus service, such as resistance to the introduction of electronic ticketing and the ever increasing cost of diesel fuel.

There is a different framework for bus service operations on Gozo. Hardly any actions have ever been taken by the authorities to enforce or improve the quality of the public transport service. It is run by operators which in the majority are owner/driver. It is only through the new Transport Authority that light is being shed on basic issues such as the sale of approved public transport tickets, the publishing of bus time-tables, the need for patronage data, and the overall enforcement of public transport regulations. Because of lack of data and unreliability of information on the scheduled bus service in Gozo, this study focuses on public transport on the main island of Malta, where the urgency for increased efficiency and operations is more pronounced.

2.1.4 Planning practices in Malta

The British initiated development planning in Malta, with the first report presented to the Government in 1945 (Harrison and Hubbard 1945). They favoured a comprehensive Town Planning Ordinance and the setting up of a Town Planning Commission. This was followed by a White Paper proposing draft regulations for a comprehensive building code. At the time, a departmental board within the Department of Works investigated zoning for development. Despite these efforts, in 1955 there was only a minor amendment to the Land Acquisition Act, which meant that despite lengthy discussions no significant action was taken. Other consultants followed Harrison and Hubbard and their contributions are summarised in Table 2.7.

Table 2.7 Planning consultants to the Maltese Government. Compiled by the author.

Consultants	**Year**	**Contribution**
Windyer Morris	Late 1950s	Recommended the setting up of a national planning authority and the enactment of the provisional Town and Country Planning Law
J.Q. Switzer	1960	Amended the Code of Police Law enabling the drawing up of a master plan for building development. The drafting of a Town Planning legislation followed in 1963.
Italconsult (UNDP)	1964	Draft building legislation consolidating all existing laws, forwarded to government for consideration.
Paterson (UNDP)	1965	Reviewed the work by Italconsult and kept the same recommendations. The result was for Sieczkowski to prepare an outline physical development plan and the engagement of Sir Desmond Heap for the drafting of a new Town Planning Act.

No action was taken on the recommendations and legislation prepared by Morris, Switzer and Italconsult. The Town Planning Act prepared by Paterson, however, was enacted in 1969 after a two-year debate in Parliament. Unfortunately, Government never implemented the act in practice. Building development therefore continued to be directed under the 1960 amendments to the Code of Police Law, under which no master plan was drawn up. Eventually a Building Development Areas Act was enacted in 1983. This made provision for the Government to establish building development areas, acquire and dispose of land within these same areas, and regulate building development. It abolished previous development controls and allowed development to take place on land previously intended as public open space.

This lack of planning led to an uncontrolled expansion of the built-up area until, in 1987, a new Government renewed its commitment to erect a planning institution and introduce strategic planning. First, a strict policy of containment was adopted. The Building Permits (Temporary Provisions) Act became the Government's instrument to control building and it provided for two years for the drafting of the Structure Plan and the establishment of a national land use planning agency. The legislation was approved by Parliament in 1992 with the first members of the Planning Authority Board appointed in October of that same year.

2.1.5 Environmental and social impact

The growth in the economy and expansion of the urban area, coupled with increased mobility and car dependence, occurred within a relatively short period of time. Fuel consumption and air and noise pollution therefore increased. Only recently has the Malta Environment and Planning Authority started an air monitoring programme, the results of which are represented in Table 2.8.

Table 2.8 Average percentage of days monitored exceeding EU emissions standards by geographic region (refer to Figure 1.2). Source: Malta Environment and Planning Authority, 2003a.

Geographic Region	% of days monitored exceeding EU emission standards
Gozo	23
Inner Harbour Region *	23
Outer Harbour Region *	61
North Western Region	38
Southern Region	41

* Denotes urban areas. High figures for the Outer Harbour Region and the Southern Region might also be due to the location of the two power stations within the urban areas of Marsa and Marsaxlokk Bay.

Transport is a very energy-intensive sector and fuel importation has increased parallel to the increase in the number of vehicles on the island. The consumption of imported fuels in Malta is presented in Table 2.9. There was a marked increase in the sale of diesel fuel over the period 1993 to1999 and a less marked increase in the sale of unleaded petrol during the same period. Also, the former difference in price between leaded and unleaded petrol has been reinstated, as for a number of years there was no price differentiation between the two, encouraging drivers to choose leaded petrol over unleaded. Since the introduction of new vehicles using unleaded fuel, use of leaded petrol has generally declined. In conformity with EU requirements, the government phased out the use of leaded petrol as from the 1st of January 2003. This was replaced by Lead Replacement Petrol (LRP).

Table 2.9 Final energy consumption in Malta (in million tonnes of oil equivalent). Source: Eurostat, 2003

By Fuel	2000	By Sector	2000
Oil	0.37	Industry	0.07
Electricity	0.15	Domestic and tertiary	0.13
		Road transport	0.21
		Air transport	0.11
Total	**0.52**	**Total**	**0.52**

Several studies have now been published, and whilst some of the earlier studies point to the negative impacts of transport-generated pollution, the more recent ones are indicating a reduction. Sacco (1999) found that the Maltese population had a high level of lead in their blood and that there was a strong spatial relationship between atmospheric lead, of which transport was the main contributor, and the location of the patients examined. This study was complemented by samples taken by the Environment Protection Directorate within the Malta Environment and Planning Authority between the months of June and October 2002. Preliminary results of a nationwide air quality survey showed that seven localities in Malta and Gozo do not measure up to the air quality standards established by the European Union. Nearly 8 per cent of the 117 samples taken from 81 localities were found to exceed the permissible lead levels in the air established by EU Directive 99/30/EC. The localities where the limit was exceeded were Gzira, Pieta, Naxxar, Senglea, Fgura, Blata l-Bajda and Fontana. Excluding Fontana (Gozo), most of the localities in Malta are within the Harbour Region. It was anticipated that the phasing out of leaded fuel would reduce the lead concentration in the air to acceptable levels over time (Environment Protection Directorate 2003a).

Another study revealed alarming levels of Benzo(a)pyrene (BaP) in particular zones in the urban areas on the main island of Malta (Said Pullicino 1999). BaP is a known carcinogen and this study aimed to identify areas of high concentration and the sources of pollution. The areas with the highest recorded concentrations of BaP were around the capital (with the power station and the hospital incinerator) and around areas with high road traffic densities.

A national study on benzene in ambient air, published in May 2003 by the Environment Protection Directorate in collaboration with ICT-IR-Corporate Services, looked at annual average benzene concentrations in parts per billion (ppb) for the years 2000 to (Jan-Feb) 2003. Despite the observed decrease in the national annual average from 2.83ppb in 2000 to 1.85ppb in 2003, some areas have seen a slight increase over the same period. These include localities

found in the North and North West of the island and all the four monitored Gozo localities. Three other areas in the South West, North East and South East, experienced a decline from 2000 to 2002 but registered a small increase in 2003 (Environment Protection Directorate 2003b).

These are among the first attempts at assessing the impacts of specific transport-generated air pollutants. More data collection and analysis will be required to estimate the real impacts of such externalities on the population. In terms of emissions, early studies estimated that 15.3 per cent of the total emissions came from road transport. Because of the old infrastructure, power generation is the largest contributor to air pollution with transport being only second (Central Office of Statistics 1998).

In the health sector studies have reported 16 per cent of 13-14 year olds as suffering from episodes of wheezing with almost 4 per cent having experienced a severe attack of asthma (Montefort et al. 1997). A comparison of the results from the I.S.A.A.C. (Malta) study performed by Montefort et al. (1997) and the traffic density maps prepared by the author for this research show a strong correlation between areas with high childhood asthma reports and major arterial roads.

Another indicator of the impacts of transport on the population is road accidents. There are over 1,000 accident casualties reported annually on the Maltese roads, with an average of 15 fatalities a year in the past ten years (National Statistics Office 2001a). This figure is relatively high when compared to indicators such as journey lengths and maximum permissible speed on the road network (80kph) but very low when compared to per head of population.

Environmental issues have long played a significant part in transport policy debates in most developed countries, particularly concerning the impacts of road traffic on people and places. Such concerns continue as people seek to defend their communities against what they see as the continual incursions of

traffic on local quality of life (Vigar 2002). In much of Europe, such concern for environmental issues has led transport from a position of low political salience and broad agreement over policy direction amongst a wide coalition of stakeholders, to one where conflicts over transport issues, particularly road schemes, are almost symbolic of broader battles for the environment. But there is an evident lack of awareness in Malta regarding the environmental impacts of traffic and increased private car use; there has never been any protest against the construction of a new road or an extension of an existing one. The population welcomes such projects, even those who will be directly affected (visually or through increased emissions). These projects are therefore a popular means of attracting votes in local and general elections.

In the past, environmental issues rarely featured as a reason for transport policy to be given any prominence in government policy. Demand, on the other hand, was the driving force behind new road schemes. The lack of information and the lack of awareness have led to apathy towards environmental issues, most importantly air quality, noise levels and land take-up, in order to facilitate the accommodation of private vehicles, both when parked and on the move. The ideals of economic growth and movement were among some of the goals of the early 1960s and 1970s, but later the rapid increase in private car ownership led to pressures on the government just to 'provide' roads; irrespective of how, where and at what cost.

However, the concern within the European Commission that environmental quality should improve has already started to change land transport policy in Malta. Apart from the research and data collection exercises commissioned over the past two years, measures to control pollution at source have already been implemented. Heavy vehicles and buses are required to be fitted with engines conforming to EURO emissions standards. The introduction of low-sulphur diesel and the removal of leaded petrol are other relevant measures aimed at reducing air pollution. In the public transport sector, the improvement in the quality of diesel was very much welcomed by environmentalists and the fitting

of EURO III engines in the new buses will certainly improve emission levels in the urban area.

Accession to the European Union also required a strong environmental administrative arm to be set up within the government structure. Through a twinning project with the UK Environment Agency, consultants have assisted the Malta Environment and Planning Authority to adopt the Environment *Acquis* (EU directives and regulations) in a number of fields, amongst which were pollution, waste management and water quality. With more awareness of environmental problems related to increasing mobility it is hoped that more measures are taken to reduce the use of private vehicles.

2.2 Institutional arrangements

In Malta the Government and the private sector have sought to develop the islands' transport capabilities by building and maintaining efficient transport structures that can 'in general' satisfy demand. However, the whole system has underlying problems, mainly because of the distribution of responsibilities among several bodies and the lack of staff and resources (TINA Vienna 2002).

2.2.1 The Maltese Government Structure

The Maltese Islands form an independent, constitutional republic. The President is the head of state but his role is essentially ceremonial, as executive power lies with the Prime Minister and the Cabinet. Depending on the electoral results, between 65 and 69 members sit in the House of Representatives; Malta's Parliament. Members of the house are elected by universal suffrage on average every five years. The last General Election was held in Malta on the 12th April 2003, following a referendum on EU membership on the 8th March. As a

result the Nationalist Party (pro-EU) received a mandate to lead Malta into the European Union, and signed the Treaty of Accession in Greece a week after the results of the elections were published.

Malta's political scene is dominated by two major political parties - Nationalist (Conservative) and Labour - and by a third much smaller party; the Green Party. Table 2.10 represents the outcomes of elections since 1966. This new term of office will be the fourth consecutive one (except for two years of Labour government between 1996 and 1998) for the Nationalist Party.

Table 2.10 Outcomes of general elections in Malta. Compiled by the author.

Year	Percentage First Preference Votes			Winning Political Party
	Nationalist Party	Labour Party	Green Party	
1966	47.9	43.1	-	Nationalist Party
1971	48.1	50.8	-	Labour Party
1976	48.5	51.5	-	Labour Party
1981	50.9	49.1	-	Labour Party*
1987	50.9	48.9	-	Nationalist Party
1992	51.8	46.5	1.7	Nationalist Party
1996	47.6	50.7	1.5	Labour Party
1998	51.8	47.0	1.2	Nationalist Party*
2003	51.8	47.5	0.7	Nationalist Party

* In 1981 the Labour Party won the elections by obtaining a larger number of seats in Parliament. The constitution was later amended for first preference votes to determine the winning party. In 1998, the Labour Government Leader called an early election because of internal problems within the Labour Party.

Since Independence, Malta's essentially two-party political system has generated a fierce political debate within the island, but has also been severely divisive. Indeed, Cini (2002) regards Malta as having one of the purest two-party systems in the developed world, a characteristic particularly ironic given that it is a small

and relatively ethnically homogeneous state. The resulting political rivalry and polarisation of Maltese society is complemented by a culture of patronage, exacerbated by the fact that elections have often been won by small margins of votes, which has often led to inaction thanks to an inability to pass and enforce laws. As a result, government policies may end up as a tattered patchwork of conflicting client demands (Mallia 1994). Within this clientelistic context, political polarisation can also be viewed in terms of 'traditionalists' and 'modernisers' (Mitchell 2002): those who wish to see Malta moving forward via a process of Europeanisation, and those who prefer to cling to 'Maltese ways of doing things'. This division has complicated Malta's path to EU accession, especially when the Labour Government put on hold the application to join the European Union during its two years in power (1996-1998).

Following the last elections there have been minor reshuffles in ministerial duties. The Ministry for Transport and Communication controls all aspects of transport; air, sea and land. After the last election, the same minister, Mr Censu Galea (an architect by profession) was re-appointed. The Malta Transport Authority falls under the responsibility of this Ministry, and it acts as the regulator for all forms of land transport on the islands.

According to the Transport Infrastructure Needs Assessment study (TINA Vienna 2002), this structure is common in many European countries. It distinguishes the state responsibilities for transport strategy and policy making from public financing and infrastructure construction. In this respect, the European problems that have remained unsolved for many years can be seen also in Malta. These are the combination of a public strategy with private capital, autonomy in the management of state enterprises, and privatisation (with public and social interests being ensured).

Other stakeholders include the Malta Environment and Planning Authority, the Malta Tourism Authority, the Occupational Health and Safety Authority and the Ministry for Health. Amongst other internal factors in the transport

industry, it has been this fragmentation that has led to difficulties of 'ownership', and implementation of, transport policies in Malta.

2.2.2 The Ministry for Transport and Communications

The principal role of the Ministry is to formulate policy in the fields of transport and communications. Its functions include monitoring and controlling the economic efficiency and effectiveness of the organisation and departments falling within its portfolio, and responsibility for ensuring that the desired goals and objectives are achieved. The portfolio of the Ministry includes: the regulation of civil aviation, maritime transport, passenger transport, traffic and roads planning, vehicle licensing and testing, postal services and telecommunications. The structure of the Ministry includes the following organisations and appointed bodies:

- Malta Transport Authority
- Malta Maritime Authority
- Department of Civil Aviation
- Malta Communications Authority
- Printed Matters Appeals Board
- Portworkers Pension and Contingency Fund Committee
- Telecommunications Appeals Board

The Ministry also has to co-ordinate with other ministries, such as Finance and Environment. With respect to the latter, where there is a great amount of overlap the ministries deal with conflicts through Memoranda of Understanding. With the new Malta Transport Authority there is an evident conflict in the planning responsibilities of both the new Authority and the Transport Planning Unit within the Malta Environment and Planning Authority. Ministers are working towards eliminating this conflict by assigning

full transport planning responsibilities to the Malta Transport Authority, as required by the Malta Transport Authority Act of 2000. However, at the time of writing, this issue had not been resolved.

2.2.3 The Malta Transport Authority

Prior to the setting up of the Malta Transport Authority, the regulation of land transport was allocated between six different ministries and was heavily fragmented. It was often the case that certain sectors were over-regulated whilst others escaped any form of control by the authorities.

In 1990 the Ministry for Development of Infrastructure was responsible for public transport, roads, street lighting, planning services, civil aviation and the air terminal. Its main objective was to provide for and assist in the implementation of infrastructural projects and works which would better meet the needs of the Maltese economy. The particular objective for the Roads Department was to construct, maintain and improve roads at the lowest reasonable and affordable cost, with a view to securing adequate connections between the harbour, the airport and the industrial estates, and to improve traffic flows to and inside urban and tourist areas (Malta Environment and Planning Authority 2001).

In 1992 these responsibilities were shifted to a new ministry. The Ministry for Environment took charge of the infrastructure construction whilst the Ministry for Transport took charge of the newly set up Public Transport Authority with the objective to ensure the provision of a safe, efficient and cost-effective public transport system. In the following years, more changes were made and the ownership of the Roads Department moved from one ministry to the other until finally in 1999 it returned to the Ministry for Transport and Communications.

These changes are a reflection of the transport policies of different governments over the years. When these deficiencies in the system of land transport regulation became apparent towards the late 1990s, the Government enacted the setting up of a new transport authority that would have overall responsibility for all aspects of land transport. The Authority with its six Directorates and 300 personnel has now integrated national road transport licensing, planning, policy, regulation and enforcement under the same umbrella.

The Malta Transport Authority was set up under Act XXIII of 2000 for three primary reasons:

- to improve the co-ordination between the Transport Ministry's existing departments that dealt with road transport, that is Roads Department, Public Transport Authority, Traffic Control Board and Licensing and Testing Department;
- to clearly delineate road transport functions and responsibilities between the new Authority and other Ministries; and
- to create a competent Authority with general overall responsibility for road transport planning, regulation and policy making (Malta Transport Authority 2002).

The Office of the Chief Executive carries out the executive conduct of the Authority, whilst two new Directorates, Transport Strategy and Corporate Services were added to make policy and administer.

The Roads Directorate's history of being moved around between ministries inevitably created organisational instability and operational problems. In 1998 German consulting road engineers were employed to undertake a comprehensive engineering survey of the strategic road network and produce a Roads Master Plan, which was presented to government in 1999. In their

report they suggested a way forward to improve the road infrastructure, which unfortunately was never put into practice, especially now that with EU accession, new procedures will come into force on the prioritisation of road infrastructure projects funded under the Structural Funds programmes.

The main priority of the Roads Directorate changed over the years from new construction to maintenance of the existing system. It was acknowledged that the network only requires upgrading. However, whilst no new investment in road construction is planned, there are schemes related to major developments being processed by the Roads Directorate at present. Also, with the results of the Transport Infrastructure Needs Assessment to extend the Trans-European Transport Networks to Malta, there are a number of roads (87kms) which have been identified for EU funding. These road projects will undergo environmental and transport impact assessment procedures before planning approval is given.

The former Public Transport Authority drew up a report in 1994 highlighting the problems of public transport in Malta and putting forward recommendations for addressing these problems. Unfortunately, this report was also never adopted, although elements of it have been implemented, including for example the provision of employee training. The main focus, however, has always been on operations. It is acknowledged today that there is an absence of clear objectives within the public transport sector. The unsuccessful attempts to formulate a strategy have been aggravated by transport factors beyond the control of the regulators, including the lack of demand management and restraint policies for car ownership and use. The availability of free parking and the perception of the convenience of car use defeat most of the efforts of the authorities to make bus travel attractive. Efforts to introduce data collection and information on bus service performance and patronage is the basis of what is presently being proposed by the new Transport Authority.

The Traffic Control Board was a long established body appointed by Government for the purpose of advising the Commissioner of Police on issues related to road traffic and to the transport of goods by land or sea in and between Malta and Gozo. The Board played a significant role in ensuring developments do not negatively affect road safety and it was responsible for considering and approving localised traffic management schemes such as changes in the direction of traffic flow and on-street parking and loading regulations. The Board was eventually expanded into the Traffic Management Directorate within the new Transport Authority.

Other players in transport implementation are the Police and Local Councils, both of whom have a role in the enforcement of traffic regulations. Whilst overall traffic management has been lacking, the past ten years have seen incremental legislation related to car use and road safety, with enforcement improving considerably. The Police and Local Councils – the latter now able to run a traffic warden service - are working together to control car parking abuse in most localities. Enforcement has improved, but because of pressures on politicians there is still some parking permitted in hazardous locations around the island.

2.2.4 Other Stakeholders

The Malta Environment and Planning Authority has a transport planning role within it (Transport Planning Unit). This is still currently active despite plans for it to move to the new Transport Authority. The Environment and Planning Authority falls under the Ministry for Rural Affairs and the Environment and reports directly to Cabinet. Being the only planning authority for almost a decade, it played a very important and active role in transport planning, combining the expertise and knowledge base of several ministries. It was also noted by TINA Vienna (2002) that the existence of an agency with such political power is not common in Europe.

Planning is administered at the national level by the Malta Environment and Planning Authority together with the subsidiary commissions and committees set up through the provisions of the Development Planning Act. The Board of this Authority is composed of 15 members appointed by the Prime Minister and includes official representatives of the Ministries of Environment, Social Policy, Finance, Agriculture and Infrastructure, plus two Members of Parliament, one appointed by the Prime Minister and one by the Leader of the Opposition. The other eight members are independent, representing private interests, including commercial and industrial activities, social and community affairs and the environment. The Authority is accountable to the Cabinet for all matters of strategy and policy, the Structure Plan and all matters affecting more than one ministerial portfolio. In contrast, the Malta Transport Authority has only five members who are politically appointed and do not represent any other sector of Malta's government.

The other department heavily involved in the transport sector is the Public Works Division within the same Ministry for Rural Affairs and the Environment. The Public Works is structured in seven departments, each having distinct roles and responsibilities. The construction and maintenance of the principal roads falls under the authority of the Construction and Maintenance Department. Most contracts for works submitted by the Public Works Division or the Roads Directorate have to go through a central Contracts Department which has the power to award such works.

The centralisation of Maltese funds makes reallocation of capital from roads to public transport extremely difficult. A budget is assigned for both road infrastructure and public transport investment in the annual government budget. Subsidies for the bus fleet replacement have been staggered and disputes over the replacement of all 508 buses arose earlier in 2003 when the Government stated that it would only subsidise 104 buses with a total capital investment of €9.3 million.

In conclusion, the transport administrative structures within this very small state are very complex and frequently changing. The "small community" aspect of political influence is very strong; everyone knows everyone involved. Two sets of responsibilities have been identified within these structures and are comprised of:

- Direct government interventions, that is, direct state participation by using public funds for providing and securing transport infrastructure, services and administrative structures (institutions).
- Implementation, control and harmonisation of rules governing the market entry conditions, including access to the profession, price regulation, fiscal conditions, social regulation of transport, technical vehicle and equipment standards and transport operations (TINA Vienna 2002).

These responsibilities are covered by the existing structures. The present problems are similar to those found in most European countries. The solution to most current problems is made more difficult by the diversity and continuing changes in authorities, departments and Ministries and by a lack of clarity about their responsibilities and authority.

In the past, the transport sector has been developed without full recognition of the socio-economic costs and benefits to the Maltese economy as a whole. This is now reflected by the pressing concerns in the sector, including:

- reducing the burden which the transport sector imposes on the Government's budget;
- rationalising the regulations of the transport sector;
- increasing accountability and commercial orientation of public enterprises in the sector;
- maximising the positive social effects of the private transport entities; and

- controlling the serious negative social impacts of the transport sector on a particularly sensitive small island (TINA Vienna 2002).

2.3 The EU Accession Process

Three years after its Independence in 1964, Malta informed the then European Economic Community that it wished to establish formal contractual relations. Subsequent negotiations led to the signing of the EC-Malta Association Agreement in December 1970. This was only the second of three such Association Agreements signed by the European Commission with a third country during this period (the others being with Turkey in 1963 and with Cyprus in 1972). The Malta agreement came into force in April 1971, and covered trade-related issues, legal approximation and other areas of co-operation, including industry, environment, transport and customs (European Commission 2000). It formalised close links between the Community and Malta and in particular the gradual removal of trade barriers to allow unhindered access to each other's markets. The result has been close trade relations, with the EU accounting for 52.8 per cent of Malta's exports and 69.3 per cent of total imports in 1998 (European Commission 1999c).

In July 1990 Malta formally applied for European Community membership. The publication of a favourable opinion (*avis)* by the European Commission in June 1993 added momentum to this process, and EU-Malta relations were oriented towards the goal of accession.

With the coming to power of a new (Labour) government in October 1996, Malta's application for EU membership was placed in abeyance, but a further change of government in September 1998 saw accession negotiations recommencing. In February 1999 the European Commission recommended that the European Council give the go-ahead for the screening of Malta's

legislation with a view to enabling the start of negotiations by the end of 1999. However, it was reported in the Maltese press that Brussels was concerned that the anti-EU membership lobby – led by the opposition Labour Party – appeared to be more organised and vocal than its counterpart on the pro-membership side, and that the Maltese government needed to organise a distinctive and clear policy in favour of EU membership as other applicant countries had done (Manduca 1999).

The European Commission's 1999 regular (progress) report concluded that Malta was a functioning market economy and should be able to cope with the competitive pressure and market forces it would encounter within the EU, provided it continued with industrial restructuring (Hall 2000). EU leaders meeting in Helsinki in December 1999 formally invited Malta and five other applicants to start accession talks in February 2000 (Ministry of Foreign Affairs 1999).

With negotiations closed at the end of 2002, the Government decided to hold an EU referendum in March 2003. This referendum was only consultative, however, and the Labour Party, still much against EU membership, encouraged its members not to vote or to vote against EU membership. The results of the referendum showed a majority of 54 per cent voting in favour of Malta joining the EU. With this result in hand, the Nationalist Party in Government called an election for 12th April to confirm the result obtained in the referendum. It subsequently signed the Accession Treaty on 16th April and Malta became a formal member of the EU on May 1st, 2004.

At the Copenhagen European Council in 1993 EU member states agreed that the associated countries of Central and Mediterranean Europe which so desired could become members of the EU and that accession would take place as soon as an applicant was able to assume the obligations of membership. These membership criteria thus set out have been referred to subsequently as the

'Copenhagen criteria'. They complement the *Acquis communautaire* requiring that each candidate country achieves:

- stability of institutions guaranteeing democracy, the rule of law, human rights and respect for and protection of minorities;
- a functioning market economy with the capacity to cope with competitive pressures and market forces within the Union;
- the ability to take on the obligations of membership, including adherence to the aims of political, economic and monetary union; and
- creation of the conditions for its integration through the adjustment of its administrative structure, so that European Community/Union legislation transposed into national legislation is implemented effectively through appropriate administrative and judicial structures (European Commission 1999a).

Following the publication of the European Commission's *avis* on the progress of the candidate countries in 1997, set out in its *Agenda 2000* (Commission of the European Communities 1997), the Commission has submitted regular reports on further progress achieved by each country. The first set of these regular reports, covering the ten associated countries in Central Europe, Cyprus and Turkey, was submitted to the European Council in November 1998. The reports served as a basis for the Council to take decisions on the conduct of negotiations or their extension to other candidates on the basis of the accession criteria.

However, the Commission's initial *avis*, requiring that applicants should have implemented all 1,400 elements of the Single Market White Paper prior to accession, neither indicated sources of information about implementation nor the relative weight and importance of those sources (Grabbe and Hughes 1998). Nonetheless, the *avis* and the regular updates have been written in such a way as to permit ease of cross-comparison between applicants, facilitating the

compilation of tables showing the relative positions of accession aspirants (e.g. O'Donnell 1999). But, while it is relatively straightforward to evaluate legislative and institutional implementation of accession requirements, assessment of levels of adoption and impact at enterprise level is much more difficult (Grabbe and Hughes 1998). For example, at the beginning of the accession process, all applicants were a long way from meeting EU general environmental standards, and subsequent progress towards meeting such standards has been uneven, both between countries and across sectors, not least in the transport sector.

Privatisation and restructuring requirements were highlighted by the European Commission as continuing issues to be addressed by a number of applicant countries (Poland, Slovenia, Latvia, Bulgaria, Romania) before meeting economic criteria of accession. For both the Czech Republic and Slovakia, transport was specifically highlighted as an area of concern (Hall and Danta 2000).

Compared with Malta, however, transport issues in other accession countries tended to reflect different priorities and scales of magnitude, often arising out of the progress, or lack of it, of processes initiated in the late 1980s and early 1990s (e.g. Hall 1993). These tend to reflect the dual characteristics of the need for improved physical integration with neighbouring and European systems, and the requirements and consequences of restructuring in those states which formally had socialist systems (Attard and Hall 2003).

Thus, the concerns for Central European candidates have focussed on issues relating to the development of the Trans-European Motorway (TEM) system and the wider concept of a Trans-European Network (Commission of the European Communities 1996), the adoption of compatible high speed rail technology (Charlton and Gibb 1998), the emergence of major private transport conglomerates, the seeking of a sustainable equilibrium in the modal split on inter-urban routes, and the restructuring and rationalising of urban public

transport infrastructure. Specific road transport issues have included the improvement of traffic management systems and reduction of accident rates, upgrading road surfaces and developing bypasses for congested urban areas (Buchhofer 1995; ECMT 1996; Turton and Black 1998).

Implementation of the September 2001 European Commission White Paper on Transport Policy will modify this pattern further, with its emphasis upon shifting the balance between modes by 2010 so as to revitalise railways, promote maritime and inland waterway transport and to pursue inter-modal integration.

The transport issues faced by Malta, in contrast, reflect the specificity of the particular social, political, economic and environmental conditions of the island. The European Commission's November 2001 progress report on Malta's harmonisation indicated that, although the transport sector was in line with the *Acquis* "to a certain extent", important parts of road and air transport law remained to be adopted in Maltese law. In the previous month, Malta had closed negotiations in transport and had secured four transitional periods (ranging between 2005 and 2006) for the implementation of EU standards in the areas of vehicle roadworthiness testing, speed limitation devices for trucks and road freight taxation. The previous report had emphasised Malta's need to assess its transport infrastructure requirements in order to prepare for its participation in the Trans-European Transport Networks. It was during the screening for the Transport Chapter of the *Acquis* in November 1999 that Malta formally expressed its interest to the Commission in the development of the Trans-European Transport Network and, as a candidate accession country, in the extension of the Transport Infrastructure Needs Assessment. Although the assessment process commenced at a time when Malta was not one of the eleven candidate countries selected for participation, the integration of Malta into European transport networks was considered to be vital from a regional, social and economic perspective (TINA Vienna 2001). It is evident now that the

motive behind Malta's interest in extending the Trans-European Transport Network to the local roads was to attract a substantial amount of structural funds from the EU for the maintenance and re-construction of the islands' main road network.

The challenges for the Government in the context of transport policy are to encourage sector efficiency through balanced competition, promote professionalism and modernisation, ensure safety, and protect the transport infrastructure and the environment through law making and enforcement. At a strategic level, this led to the following requirements:

- to set up a comprehensive body of transport law;
- to strengthen the role of the Ministry of Transport and Communications and especially the Malta Transport Authority in the implementation, and most importantly, enforcement of transport policy;
- to adjust the legal framework of transport to modern technical and professional requirements in line with the *Acquis* (Pearce 2001).

Malta's requirements to comply with the transport *Acquis* mostly represent legislative harmonisation; that is the adoption of EU directives into Maltese law. Examples of harmonisation relate to:

- Operator licensing (both for passenger and freight transport),
- Driver training and testing procedures (stricter driving and written tests),
- Motor vehicle standards (engine efficiency, speed limitation devices for heavy goods vehicles and maximum dimension for circulation),
- Social legislation (driving hours and minimum rest periods),
- Vehicle roadworthiness testing, and
- International market access for freight transport).

These are measures of minor relevance to the wider scope of this study, which aims at introducing a national framework for transport policy. The aspirations of this thesis therefore go beyond the strict requirements of the EU *Acquis*, that is, to make recommendations which aim at improving Malta's current transport situation. Also, in future, the EU might impose other policies through directives, and Malta wants not only to be prepared to adopt these policies but also to actively participate in the debate.

2.4 Conclusions

Malta underwent considerable change over a relatively short period of time. Economic development brought about new pressures on the land and the resources. These however happened in parallel with political and institutional changes which had to manage change. In the land transport sector the fragmented institutional structures were under a lot of pressure to provide more infrastructure for the ever-growing demand.

Malta has also joined the European Union in 2004 and despite being among the first to adopt most of the Community law, in the field of transport, there is the issue of implementation and adaptation to new rules and regulations. In addition to this, there is the concern of sustainability in transport policy advocated in the European Union Transport White Paper, which Malta will have to embrace. EU transport policy however is discussed in Chapter 4.

3.0 Land Transport Issues in Malta

Chapter 2 of this study discussed the historical development, economic growth and social change in the Maltese Islands. It also outlined the functions of the institutional arrangements for land transport in Malta to give an indication of the origins of the current situation. This chapter will focus on the land transport issue to assess the current state of the problems related to transport. It presents a case study from an operational perspective, considering the levels of transport accessibility of the population, the state of the road network, the performance of public transport and other modes of public/private transport.

The data used in this chapter have mostly been provided by the Malta Environment and Planning Authority, the Malta Transport Authority and the National Statistics Office in Malta. Since its establishment in 1992 the Malta Environment and Planning Authority has been undertaking a process of research into several issues related to land use planning. The data collected in this process also extended to land transport. It conducted Household Travel Surveys on two occasions, one in 1989 and another in 1998. It regularly collects traffic volume data at various points along the road network (exercise started in 1996), and has made efforts to build a land use/transport model to aid in the process of decision making for land development planning applications. With the present Structure Plan Review, which falls under the responsibility of the same Authority, and the publication of the Topic Papers, useful information has been provided on all aspects of development, from demography, industry and housing to transport.

The Transport Infrastructure Needs Assessment (TINA Vienna 2002) was the first study of all aspects of transport (air, sea and land) to be carried out in Malta. Started in May 2001, and submitted the following year to Cabinet, the study identified the extension of the Trans-European Transport Network on the territory (see also page 56). All the other applicant countries, namely

Bulgaria, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, Slovak Republic, Slovenia and Cyprus, underwent a similar assessment process, with a report published in 1999 (TINA Vienna 1999). The *acquis communitaire* contains the guidelines for the development of the Trans-European Transport Network for the present and future European Union. The reports set out the findings of the work, which was carried out under the supervision of a Senior Officials Group and executed by the technical secretariat in Vienna, in close co-operation with the relevant administrations in the applicant countries. Because of the withdrawal of the membership application by the Labour government in 1996, Malta did not participate in the first phase with the other countries. Following the 1998 re-opening of the membership process, it seemed appropriate to assess Malta's transport infrastructure according to the agreed methodology and to launch the assessment process in Malta as well. The Final Report had very useful information for this study.

Most of the data in this study were managed using a Geographic Information System, which allows easy compilation, access, management and analysis of spatially located data. The main goal of an information system is to empower planners and experts by providing them with relevant information and software tools to manage it according to their needs. It also converts the visualisation of transport information into well-designed maps and facilitates the study of issues such as congestion, high car ownership, distribution of trip attraction areas, public transport structures and the display of traffic densities.

3.1 The road infrastructure

Malta today has more than 2,000 kilometres of roads. Table 3.1 represents a detailed classification of the different roads found on the islands. It is important to note that the central government only has responsibility, in terms of financing, design, construction and maintenance, for the Arterial and

Distributor road network. The remaining access roads fall under the jurisdiction of the individual Local Councils of which there are a total of 67 in Malta and Gozo. Local Councils are allocated an annual budget for the maintenance and upkeep of their roads (Ministry for Justice and Local Government 2002).

Table 3.1 Road network for the Maltese Islands by category (2001). Source: Roads Directorate, Malta Transport Authority.

Road Classification	**Length (km)**		
	Malta	**Gozo**	**Maltese Islands**
Arterial and Distributor	137	48	185
Urban and Local Access (surfaced)	1,007	134	1,141
Urban (unsurfaced)	208	73	281
Non-urban (surfaced)	542	105	647
TOTAL LENGTH (km)	1,894	360	2,254

The road network increased from 1,971 km in length in 1997 to 2,254 km in 2001. This increase was a response to the growth in the number of motor vehicles in the islands. The government's policy of providing road capacity to accommodate the increasing numbers of motor vehicles kept pace with the growth between 1997 and 2001 (Table 3.2). Indeed, such supply is evident in 1998, following the opening of new stretches of road on the arterial road network.

The road network in Malta consists of a radial system emanating from Valletta, coupled with a network of cross-connecting roads between key towns and villages in the hinterland of the Grand Harbour. Hence, the arterial roads run the length and breadth of the island catering for longer distance traffic and allowing access to the distributor roads that connect traffic to the main urban centres and other key developments. The road network and extent of the built-

up area on the island and the traffic density on the arterial and distributor road network are shown in Figure 3.1.

Table 3.2 Number of vehicles per km of road for the Maltese Islands (1985 – 2000)*. Compiled by the author.

Year	Motor Vehicles per km of road
1985	74
1987	70
1988	76
1989	82
1990	87
1997	113
1998	106
1999	109
2000	113
2001	113

* Data on the number of kilometres of road for the period 1991-1996 was not available.

The road network has seen considerable improvements over the past decade, not simply in terms of road construction and maintenance, but also in better traffic management and the implementation of traffic calming measures in residential and historic narrow streets. The opening of the Santa Venera Tunnels in the heart of the urban agglomeration and the construction of the Tal-Qroqq Junction in Msida helped to ease the traffic flows through congested areas. These two major projects have aided the improvement of the Number 1 road, which links Marsaxlokk Bay in the South (the Freeport) to Luqa (Malta International Airport), the Grand Harbour areas and the north (via St. Paul's Bay and to Cirkewwa Ferry Terminal for Gozo). Furthermore, a number of junctions have been modified and are now controlled by traffic lights (Transport Planning Unit 2001). The major road construction works carried out on the network and costing over €1million are listed in Appendix I of this study.

The traffic density on the main road network, as represented in Figure 3.1, also demonstrates where the largest concentration of traffic lies. The built-up areas generate most traffic whilst the density reduces with distance from the Grand Harbour. However, there are centres such as St. Paul's Bay in the north and Marsaxlokk in the south that also generate traffic. This concentration of traffic in a relatively small area only heightens the problems of pollution and congestion. There is therefore an evident conflict between the requirements of the population for mobility and the quality of life of the majority of the people. The sections of the road network to have registered more than 40,000 vehicles per day are also subject to greater risk of surface damage and therefore require more maintenance.

Use of the network by heavy vehicles is a major issue affecting traffic volume, flow and surface maintenance. The restriction of heavy vehicles on particular parts of the network is only implemented for small narrow village roads. Only recently has the Malta Transport Authority drawn up new regulations for heavy vehicles in an attempt to reduce damage to road infrastructure. Under the new regulations the maximum height for all vehicles cannot exceed four metres, their weight cannot exceed the EU maximum of 44 tonnes, with a maximum permitted axle-loading of 11.5 tonnes (Anon 2003a). This would ensure that less damage is done to the roads, which are now being constructed according to European standards.

The physical condition of the road network in Malta was examined by German Consultants GTZ in 1998 in a report presented to the Government outlining the present state of the roads and the reasons why such conditions occurred. The results showed deterioration of the already poor network condition. The report claimed that, out of the 396.2 km lanes of strategic carriageway, 131.8 km were in need of immediate attention, whilst 180.2 km would be requiring attention within two years. The cost for improving what amounts to 78 per cent of the arterial and distributor road network was estimated to be close to €47

million (GTZ 1998). This is very high compared to the current €13 million allocated each year by Government for roads.

The GTZ report also discussed the design of these strategic roads and claimed that 88 per cent of the carriageways were "over-designed", being too wide for the amount of traffic carried on them, whilst the remaining 12 per cent were "under-designed" with carriageways that were too narrow. The total land "wasted" in over-designing the arterial and distributor road network alone was calculated to amount to 0.896 km^2, most of which is prime development area (GTZ 1998). This report did not take into consideration the anticipated growth in traffic volumes, therefore conclusions represented only the situation in 1998.

The Transport Infrastructure Needs Assessment (TINA Vienna 20002) on the other hand proposed extensions to the network based on projected demands for the next 20 years, with most proposals requiring changes in the road configuration (alignment) (Figure 3.2). The report concluded that €90.66 million would be required to realise the proposed network. The financing of such projects has still to be discussed but, before that the proposed individual projects will be subject to a socio-economic assessment and an environmental impact assessment.

The Main Road Network, according to these reports, requires major reconfiguration to remove dangerous bends and increase capacity at four points (indicated in Figure 3.2 by arrows) whilst maintenance works would improve the surface conditions. There are funds for the completion of the proposed network by 2015 from the European Union Cohesion and Structural Funds. It is evident that the European Union envisages accommodating the increasing traffic over the next 20 years. The objectives of the Transport Infrastructure Needs Assessment are therefore in obvious disagreement with 'sustainable' measures such as restraining car use and improving public transport

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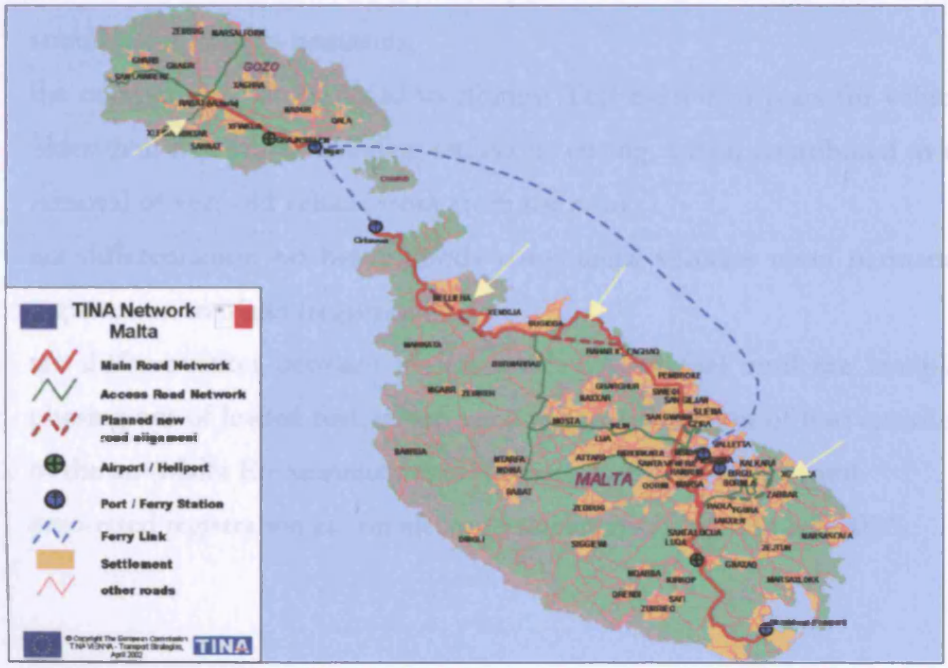
Figure 3.2 The planned new road alignments as suggested by TINA Vienna to form part of the Trans European Transport Networks. Source: TINA Vienna, 2002.



3.2 The true cost of land transport in Malta

Following the discussion of the transport infrastructure in Malta, this section presents an estimate of the cost of road transport, which includes both the fixed and external costs. The European Union had proposed in its 2000 White Paper to internalise the external costs of transport into the transport system, with the objective of achieving not only a fairer pricing scheme but also of reducing the negative externalities of transport. Table 3.3 describes Government transport expenditure and revenues for 2002.

In the case of Malta, the Government has not as yet devised a system to include the external costs of car use; instead a number of blunt measures have been introduced over the years to raise revenue. These have included:

- an additional annual road tax to access Valletta introduced in 1995 and revised in 1997 (€23 to €46), which aimed to reduce the number of cars entering the Valletta peninsula;
- the compulsory Vehicle Road-worthiness Test every two years for vehicles older than five years, including emissions testing, which contributed to the removal of very old vehicle stock from the road;
- tax differentiation on heavy goods commercial vehicles upon permanent importation to Malta (registration);
- tax differentiation between leaded and unleaded fuel until the complete phasing out of leaded fuel, which encouraged a reduction of lead emissions to the air (Malta Environment and Planning Authority 2003a); and
- zero-rated registration tax on electric vehicles, introduced in late 2002.

Under the present system, motorists are also taxed at vehicle registration and licensing. Therefore, upon purchasing a motor vehicle, the driver is making a substantial investment in relation to the average household income. The average gross annual household income in Malta in March 2001 stood at €10,984 (National Statistics Office 2001b) whilst one of the cheapest small petrol engine cars would cost around €9,370. There is also an annual license fee. This varies with engine size, starting from as low as €46 for the smaller cars. The number of cars on the road, though, has increased despite these costs. There are more cars now on the road than ten years ago when taxes were lower and the annual license fee was less. As for operational costs, motorists are not directly taxed, except for fuel tax. No other costs are incurred for using the car. These include use of the road (in the form of tolls) and on-street parking in urban areas, which in Malta is still free.

Table 3.3 Government expenditure and revenues from road transport for 2002. Compiled by the author. Sources: National Statistics Office, 2003.

Description	**Expenditure (in mio €)**	**Revenues (in mio €)**
Road construction and maintenance costs at both local and national government.	20.5	
Subsidy paid to Public Transport Operators (guaranteed earnings).	1.9	
Subsidy paid to Public Transport Operators to change the bus fleet (bus replacement)	0.2	
TOTAL	**22.6**	
Petrol fuel tax		34.7
Diesel fuel tax		27.2
Vehicle licensing tax (vehicle operating taxes) including: - the annual road tax which varies with vehicle type and engine size - the V-licence to access Valletta (almost 49,000 vehicles had access to Valletta in 2002) - fees on driver testing and licensing - fees on Vehicle Roadworthiness Testing (VRT) - other administrative fees		79.1
Vehicle registration tax (vehicle importation taxes)		4.0
TOTAL		**145.0**

The latest debates in the island have been about the introduction of on-street parking charges. Where discussed in the local newspapers, such proposals were suggested as a new form of 'unpopular' tax. (Grech 2001). This was always seen as politically dangerous and an alternative method in the form of time managed

parking in town centres was adopted. This increases the availability of space by limiting the time allowed for individual parking acts (but without a charge). This system is widely used across the European Union with or without charges levied as well, and is currently being piloted in a number of Maltese towns.

Apart from the fixed costs of transport, there are also costs associated with the externalities of transport. The European Commission's policy is very clear in stating the need to replace the existing transport system taxes with more effective instruments for integrating infrastructure costs and external costs (European Commission 2001). These charging instruments would aim to internalise all costs, including accidents, air and noise pollution and climate change emissions, as well as infrastructure provision costs. Despite all these efforts, the wider external social costs associated with roads, some of which include polarization, problems of policing and governance (Adams 1999), do not yet feature in European discussions on transport costs.

This study presents an estimate of these costs for Malta as reported in studies carried out for and supported by the European Commission by CE (1999) and INFRAS (2000). Detailed review of these studies and their approaches are discussed later in Chapter 4. The aim of this exercise is to initiate a debate on internalising the full costs of transport in the islands, in line with the European Union White Paper objectives. Cost per unit (vkm), as calculated in the CE and INFRAS studies, were applied to the total vehicle kilometres for different modes. The estimates provided in Table 3.4 refer to the total annual external cost of different modes of transport in Malta for the year 2000 (see also Appendix II for details).

The study carried out by CE (1999) focused on passenger cars and heavy vehicles. Cost data for buses and coaches were available only from the INFRAS (2000) study. The ranges for Malta, based on the studies reviewed in Chapter 4 and the EU White Paper, indicate the possible maximum and minimum level of costs associated with each externality.

Table 3.4 The external costs of urban transport for Malta by various modes (in mio € for the year 2000). Estimates adapted from CE, 1999 and INFRAS, 2000. Author's own calculations based on 2000 transport statistics data available from the Malta Transport Authority.

Mode	Accidents	Pollution	Climate Change	Noise	Infrastructure	Total
Passenger Car	45.9	16.7	21.5	3.4	28.9	**116.4**
Buses and Coaches	1.3	6.4	2.9	18.7	-	**29.3**
Lorries and Heavy Vehicles	46.9	50.7	13.5	22.5	14.0	**147.6**
TOTALS	**94.1**	**73.8**	**37.9**	**44.6**	**42.9***	**293.3**
Ranges for independent studies	6.5 – 117.7	45.8 – 274.8	34.9 - 294.4	2.2 - 50.1	49.8 - 216.4	**109.0 - 953.4**
Ranges provided in the EU White Paper	4.4 – 56.7	50.2 – 327.2	4.4 - 33.6	15.3 - 87.2	45.4 - 71.4	**119.7 - 576.1**

* The total cost is actually lower than the range totals because of the lack of infrastructure cost for buses and coaches represented in this table as well as in the INFRAS (2000) study.

In summary, the total external costs of transport in 2000 stood at €293.3 million. Given a 1.4 per cent growth rate in the vehicle population, and no significant change in their operating characteristics, the estimated cost would have been €301.5 million in 2002. This works out at €1,159 per licensed vehicle in the islands. The growth rate is based on the Malta Environment and Planning Authority's population, household size and cars per household projections (Malta Environment and Planning Authority 2001). The revenues generated by the Government in 2002 were only €145 million, barely covering half the external costs in total.

It can be also estimated that in 2002 the average licensed vehicle owner paid government a total of €557 in total transport taxes. Therefore an additional €602 per year would be required to cover the above mentioned external costs. These costs are very conservative estimates when one considers that the costs

associated with costs of a social nature outlined by Adams (1999) are not taken into account.

3.2.1 The Valletta road charging scheme

With increased car ownership and the concentration of jobs still focusing on Valletta, there is growing pressure on the infrastructure of the city. Furthermore, the pedestrianisation of Valletta's main road (Republic Street) and the system of one-way streets concentrate a larger number of cars in the very narrow streets of the city. Parking is also a problem. Today many of the city's squares and streets are used as open (free) parking areas.

A charging scheme was introduced in Valletta in 1995 to regulate the flow of traffic. This is referred to as the V licence. A "V" is displayed on the licence disc and access is granted inside the city walls. Unfortunately, the system does not impose an upper limit of how many cars are allowed to register for a V licence. Anyone is entitled to have a V licence if they are prepared to pay an additional annual fee. Also, residents with a permanent address registered in Valletta do not pay the supplementary licence. Table 3.5 shows the number of V licences issued between 1999 and 2002 by the Licensing and Testing Directorate within the Malta Transport Authority. It also summarises the revenue generated from the system.

The figures in Table 3.5 show relative stability in the percentage of the vehicle fleet being issued with a V licence annually over the past five years. But this also implies that, as the number of vehicles in Malta increases, so does the number of licences and vehicles driving into the city. The considerable amount of money generated from this system is not re-invested directly into transport (neither on public transport nor transport infrastructure in general). The government collects the money and re-distributes the funds according to its priorities. This lack of reallocation of funds to public transport projects shows the government's negative attitude towards using such charging schemes for

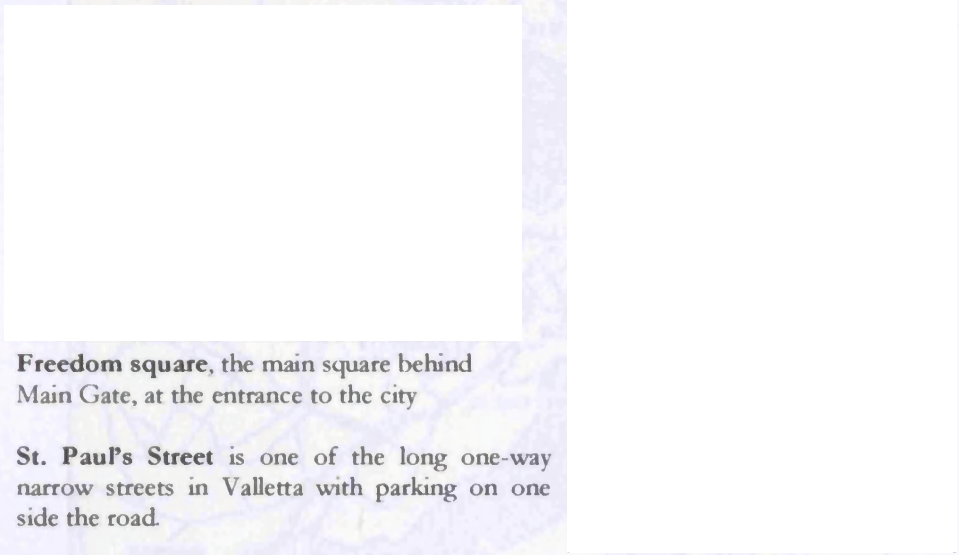
restraining car use and providing an alternative. Politicians have always seen the charging scheme as a stable income for Government. Any changes to the current system - perhaps an increase in the fee and greater restrictions on motorised traffic into the city - would have to be discussed at Cabinet level because of their political sensitivity.

Table 3.5 Valletta "V" licence (charging) system 1998 - 2002. Source: Licensing and Testing Directorate. Author's own workings.

	1998	1999	2000	2001	2002
Total Licensed Motor Vehicles	224,499	232,681	246,825	254,052	261,882
V-licensed Motor Vehicles	42,165	43,935	46,478	48,086	48,626
Resident Vehicles	4,358	5,033	5,926	4,289	5,382
% of total vehicles with the V	20.7	21.0	21.2	20.6	20.6
Estimated Annual Revenue in €	1,939,590	2,021,010	2,137,988	2,211,956	2,236,796

This system is restrictive, but it is evident from the high percentage of people who pay the annual fee that there is still a large proportion of the vehicle population that has access to the city. Valletta has reached its saturation point in terms of parking availability, as many individual studies suggest (see for example, Carbonaro 2000). The high number of drivers paying the V licence also indicates that the €46 paid annually is a relatively cheap price to pay. However, there are still no restrictions or charges on parking within Valletta, except for parking attendants requesting a gratuity for looking over the car (Figure 3.3).

Figure 3.3 Examples of parking problems in the capital city of Valletta. Source: The Times, 2003.



Freedom square, the main square behind Main Gate, at the entrance to the city

St. Paul's Street is one of the long one-way narrow streets in Valletta with parking on one side the road.

The Traffic Volume surveys conducted by the Transport Planning Unit at the Malta Environment and Planning Authority indicate that 37,000 vehicles enter the city every day. The traffic is all channelled through two main entry points into the city, which increases the problems of congestion during peak hours (Figure 3.4). Traffic towards Valletta during the morning peak sees cars and buses competing for the same space (Figure 3.5). During off-peak hours, traffic declines and flows freely, as is suggested in Figure 3.6, showing the 24-hour distribution of traffic along St Anne Street in Floriana towards Valletta.

This is the general trend for traffic on most of the network with a peak during the morning hours and more evenly distributed traffic throughout the rest of the day. The morning peak reflects commuter traffic and therefore the demand for parking at major employment centres, including the city of Valletta. The limited parking and limited space for traffic generates considerable circulation of traffic, mostly looking for parking. The parking problem does not lessen at different times of day. Commuters park their cars for long hours while shoppers and short-term visitors have to park farthest away from the shopping centre.

Figure 3.4 Approaching the Valletta and Floriana peninsula. Drawn by the author.

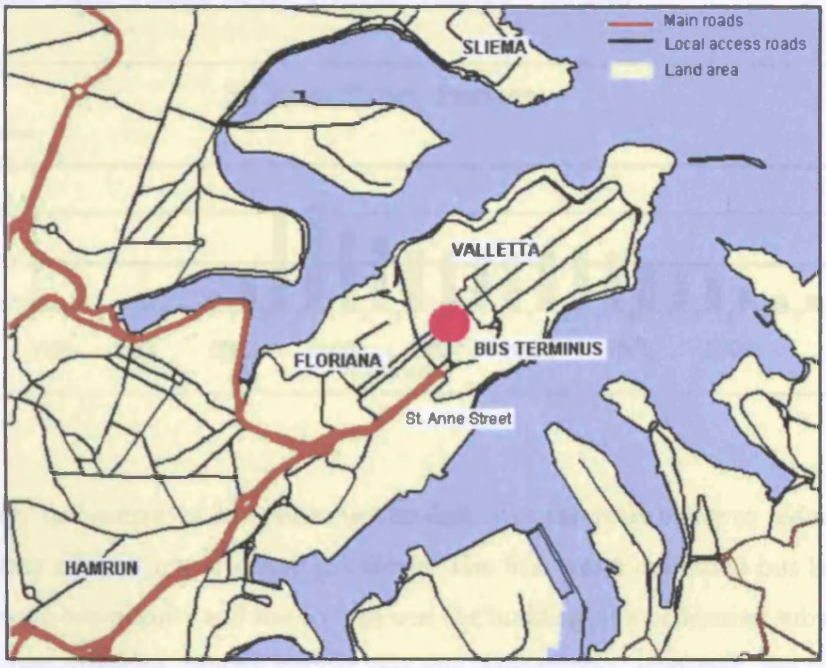


Figure 3.5 Typical morning peak hour traffic into Valletta (approaching St. Anne Street in Floriana). Photograph taken by the author at 0800 hours on a typical weekday in Dec. 2001.

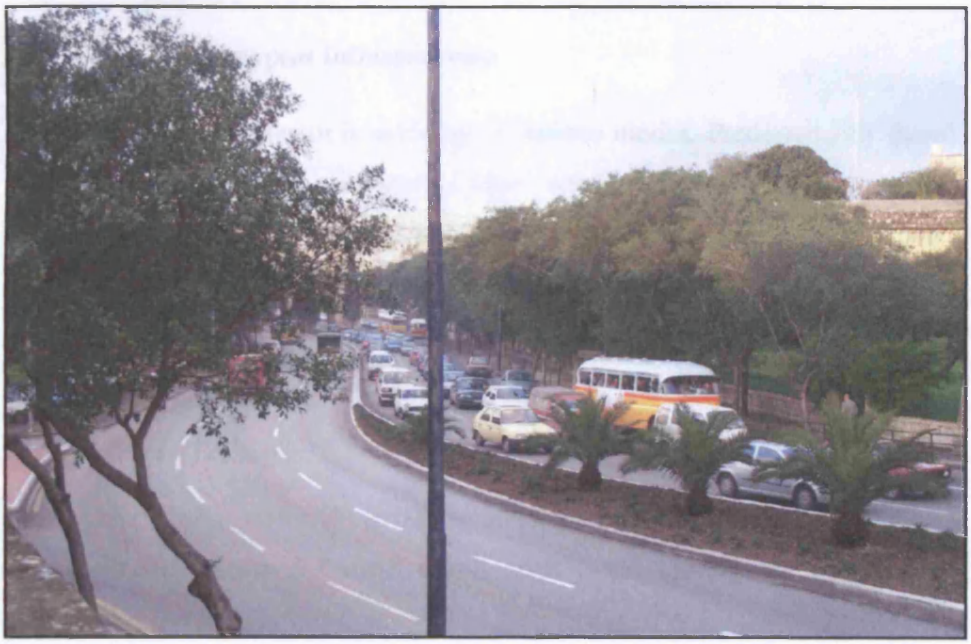
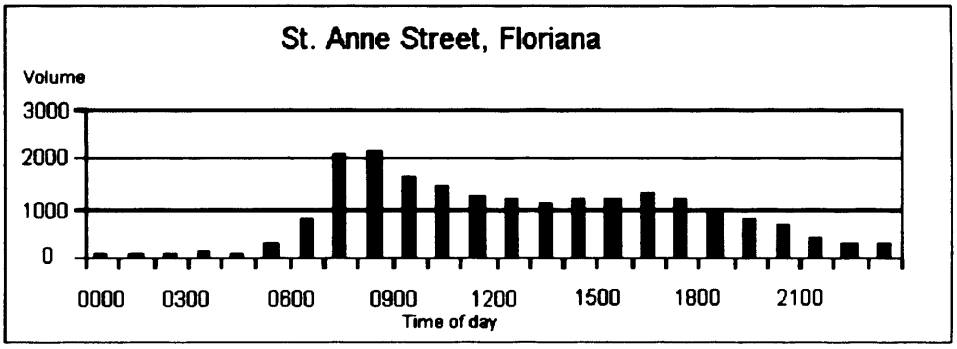


Figure 3.6 Distribution of traffic flow into Valletta at various times of day.
Source: Traffic Volume Survey, Transport Planning Unit, 2001.



A very few initiatives have been undertaken over the years to try to reduce the impacts of such traffic entering Valletta. The first was a dedicated bus lane to improve bus priority and the second was the building of a pedestrian subway at St Anne Street to remove people crossing haphazardly. However, the lack of maintenance and security in the subway has led to a decline in the number of people using it. In view of this, a decision was taken to install traffic lights for a pedestrian crossing, causing the traffic on a main thoroughfare to stop and start regularly, increasing pollution and causing more delays.

3.3 The public transport infrastructure

The public transport sector is made up of various modes. Predominantly there are the scheduled bus services. Other complementary modes are the unscheduled (private) coach and minibus companies, the taxi services, horse drawn carriages and the car rental services. This section looks at these sectors, with a particular focus on the main public transport service – the bus network.

3.3.1 The current bus services

The public transport service in Malta relies mainly on buses and operates a radial network across the main island, with buses leaving the terminal at

Valletta's Main Gate, eventually to return to Valletta. This system is a remnant of that adopted when buses were first introduced in the early 1900s. Valletta is still a major destination, in that it still attracts a large percentage of employment and shopping trips. But it is also a major interchange hub for passengers to reach various destinations around the island. The structure of the Valletta main bus terminus has remained unchanged since the 1930s as exemplified by a pre-war photo of the entrance to Valletta. Both the structure of the bus terminus at that time and some of the buses are still visible today (Figure 3.7).

This structure supports the largest share of the population's travel demands. The 1998 Household Travel Survey showed Valletta attracting the highest percentage of employment trips on the island (9%). However, from the same survey it was evident that even Marsa and Birkirkara (two towns which have the largest share of the population on the island) attract considerable amount of trips (7% and 6% respectively) (Malta Environment and Planning Authority 2001). Marsa is located at the mouth of the Grand Harbour whilst Birkirkara is located in the more central area of the island (refer to map on page 14).

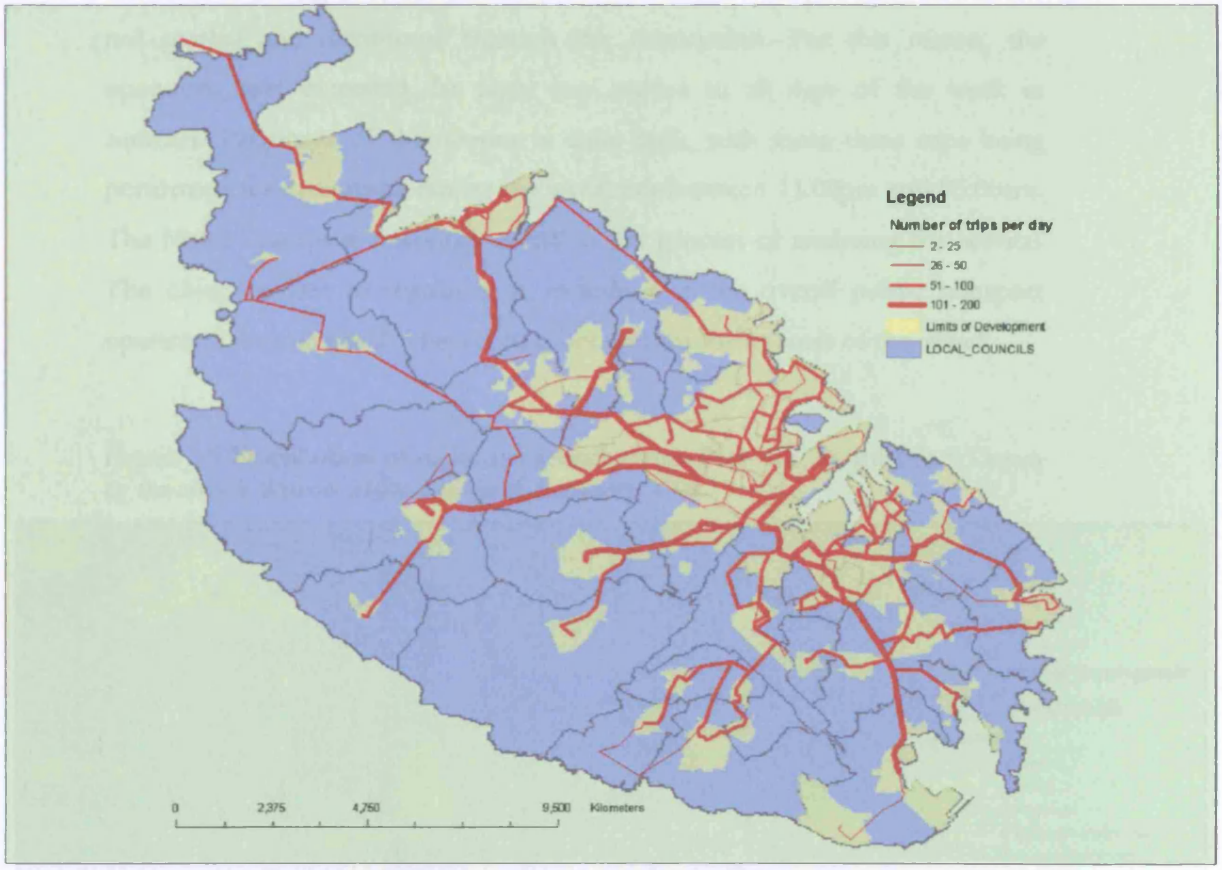
Figure 3.7 The Valletta Bus Terminus with Main Gate in the background during the 1930s*. Following heavy bombing during the war, the Main Gate had to be rebuilt and today a modern structure stands in its place.

* Exact date and source of photograph are unknown.

The network of regular bus services is extensive. Today around 75 per cent of the population live within 5-10 minutes walk of a bus stop (Malta Environment and Planning Authority 2001). There are 91 different routes being operated from Valletta, on average 13 km in length, with an average frequency of 20 minutes. Figure 3.8 presents the daily number of trips per route for the daytime service. It is clear that the frequency is very high for most of the network, with Birkirkara, St. Paul's Bay, Rabat and Marsaxlokk being particularly well catered for. These are the major employment and tourist centres around the island. It has been estimated that for both summer and winter, the complement of buses required for a typical day's operation is 275 buses. In 1999-2000, the Public Transport Authority carried out a census of passengers on scheduled services in summer and winter, on representative days. In summer there are typically around 3,666 scheduled bus trips on a weekday, whilst in winter the frequency is slightly reduced to 3,522 trips. The number of passengers carried on a weekday is 86,000 whilst in summer the figure increases by 23 per cent to 106,000 trips (Public Transport Authority 2000).

Every town and village has a direct bus service connection with the capital city of Valletta and, since the early 1990s, a number of additional direct services, largely catering for the travel needs of tourists, have been introduced between resorts and the beaches or places of historic or cultural interest. These operate outside Valletta, at 30 and 60-minute intervals.

Figure 3.8 Number of daily trips per bus route. Drawn by the author. Data source: Malta Transport Authority, 2003.

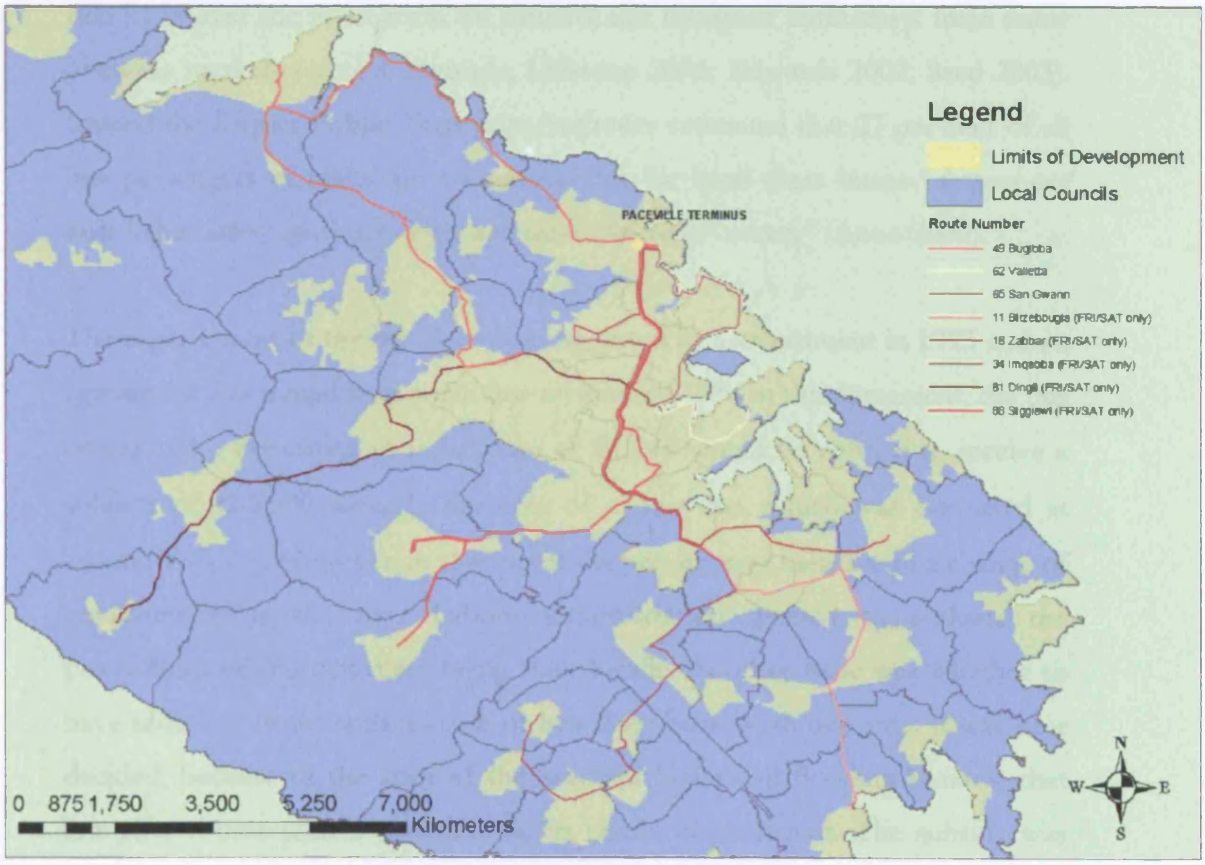


With loss of patronage and increasing requests for subsidy, the present bus system is not sustainable. Traffic congestion does not allow for buses to work efficiently or within the stipulated schedules. There is also evident redundancy in the system, with a very high frequency of service in areas where patronage is low.

The night bus service is run separately, and very differently, from the daytime service. It is not regulated in any manner. After initial consultation with the then Public Transport Authority, the bus operators were allowed to perform some trips from Paceville, St. Julian's (the main entertainment area of the island)

during weekends to the outlying villages (Figure 3.9). The money generated from this service goes directly to the owner/driver of that particular bus and is not pooled and distributed through the Association. For this reason, the operators have extended the night bus service to all days of the week in summer. Patronage of this service is quite high, with some three trips being performed for each route during the weekends between 11:00pm and 03:00am. The Malta Transport Authority is still in the process of analysing the service. The objectives are to regularise it, include it in the overall public transport operators' revenues and extend it to other entertainment areas of the island.

Figure 3.9 Distribution of night bus services from Paceville, St. Julian's *. Drawn by the author. Source: Malta Transport Authority, 2003.



* line thickness indicates a number of routes travelling along same road

The nature of the buses is also a problem within the present system. The buses are old with the average age of the vehicle fleet being 25 years. They do not meet passenger demands in terms of accessibility and comfort, and conflict with restrictive traffic management schemes in town centres because of their size (all seating between 30-45 passengers). Some 15 per cent of all existing buses are regarded as unsafe (estimate quoted in a debate in parliament, 9th May 2000). Many are mostly rebuilt by their owners and are used only on alternate days because of the unique working conditions for public transport in Malta, which see a day-in day-out shift. They are also considered by some to be part of the national heritage and (not terribly flattering) icons of Malta (Attard and Hall 2003). The rarity value, colours and shapes of the vehicles and the idea of a fun ride have over the years attracted tourists and transport enthusiasts from many overseas markets (see for example, Lidstone 2001; Edwards 2002; Seed 2003). Indeed the former Public Transport Authority estimated that 27 per cent of all bus passengers in Malta are foreigners. But for local users buses "*designed and built half a century ago... are simply not suitable for the 21st century*" (Anon 2000).

The replacement of the bus fleet was suggested by Government in 1993 and an agreement was signed with some bus owners in 1995. In this agreement, the bus owners who deposited an initial sum of €1,243 would be entitled to receive a subsidy of €55,000 towards the cost of a new bus, which was estimated at around €87,000. However, at that point the process was halted with a change of government, as the new Labour administration wanted to evaluate the possibilities of the new fleet being built locally. Another issue was whether to have ultra-low buses with no step or low floor buses with one step. It was later decided, because of the state of the roads in Malta and flooding hazards, that low floor buses with a hydraulic ramp would be sufficient. The subsidy was eventually increased and the Public Transport Authority issued new specifications in 1996 (Government of Malta 1996). At the same time, bus owners were prohibited from importing second-hand buses that did not conform to the stated specifications (Spiteri 2002). Vehicle import rules have also been relaxed to allow second-hand buses less than 18 years old. In addition

to this, because the new buses are to go to the owners who lodged deposits, vehicle condition will not determine which buses are to be replaced (Attard and Hall 2003). However, the new buses are required to meet European standards for safety and accessibility. Some of the requested specifications include:

- Low-floor, with easy access for all, including senior citizens and disabled people (Anon 2001).
- A maximum length of 11 metres and seating a maximum of 45 passengers (current capacity is 32-36).
- Being equipped with air conditioning and having proper ventilation for summer (Xuereb 1999)
- Conforming to EURO III engine emissions standards or better.

Also, with the implementation of the full Vehicle Roadworthiness Test, the new fleet is set to improve some elements of the service. This though will not be enough. From a 1999 survey of local bus users, a wide range of public transport issues perceived as needing urgent attention were articulated (Table 3.6).

Table 3.6 Summary of perceived public transport provision shortcomings derived from a public opinion survey. Source: Attard and Hall 2003.

- Inefficiency in meeting schedules
- Need for re-routing services to better meet the changing demand
- Lack of provision of adequate bus shelters in many areas
- The low status associated with travelling by bus
- The physical inconvenience of the buses used (in terms of luggage space and the inability to meet the needs of the disabled)
- A general apathy towards changing the system
- Greater professionalism of drivers needed
- A need for greater discipline from the regulatory authorities
- The monopoly over public transport operations held by the Association
- The inability of the authorities to communicate with the operators to improve facilities

The trends in public transport patronage have not been very encouraging. In the light of the increase in car ownership and changing consumer behaviour, between the years 1990 and 2002, the patronage of the regular urban and suburban bus service decreased by almost 10 million trips per year (see also page 36). During this period the bus fleet remained the same size, the service network expanded from 64 to 91 routes and subsidy increased by almost 50 per cent between 1995 and 2000.

The new Authority is now dealing with most of the issues regarding the declining public transport service. And even though the operational inefficiency, the problem of enforcement and lack of professionalism in the sector are still among the biggest problems of public transport service in Malta, there are signs of improvement and overall willingness for change. These changes are set to take place within the present administrative structure of regulator and private operator providing services according to strict social obligations. These include:

- Obligation to Operate

  The first public service obligation that the State imposes on the operators is that of continuity and regularity in the operation of national bus services and the maintenance of a comprehensive network of bus routes. The network of bus services has been largely retained through State pressure and developed further to cater for more complex travel patterns. Routes have been added over the years to the existing pattern, which may not be suited to present passenger needs. The basic route structure is well established although cross-linking and circular/feeder operations are very limited.

- Obligation to Carry

  The State obliges operators to carry certain categories of passengers at special concessionary fare rates. It is Government policy to encourage increased mobility amongst the elderly and, therefore, every Maltese bus traveller over the age of 61 years and in possession of a "*kartanzjan*" is

eligible for fare concessions. The obligation to carry school students is mainly covered by agreements with operators of unscheduled buses (coaches) and minibuses.

- Tariff Obligations

  The State imposes on the operators the fare tariffs that are to be charged to passengers. The Government fixes and enforces the fares for all passengers. This is a highly contentious area in which the Government is required to strike a balance between acceptable working conditions for the operators in the sector and the socio-political acceptability of fare increases. This has also been an issue with the increasing subsidy.

The regulatory procedures for bus services in Malta are summarised in Table 3.7 (refer also to Table 4.13 for comparisons with other European countries).

Table 3.7 Regulatory procedures for bus services in Malta.

Bus Operators	400 (1 Association)
Ownership	Private (100%)
Operator's responsibilities	Hiring of staff Purchase of vehicles (subsidized by Government) Provision of depots Vehicle maintenance Revenue collection and distribution among owners
Quality controls	Vehicle controls by Government (Vehicle Roadworthiness Testing) No service quality monitoring
Integration	One Association runs all network and administration National fare system based on zones Daily and weekly bus passes available across the whole network (not extensively used because of the higher cost incurred)
Authorisation procedure	Authorisation by the Malta Transport Authority (National Government)
Financial Support	25-30%

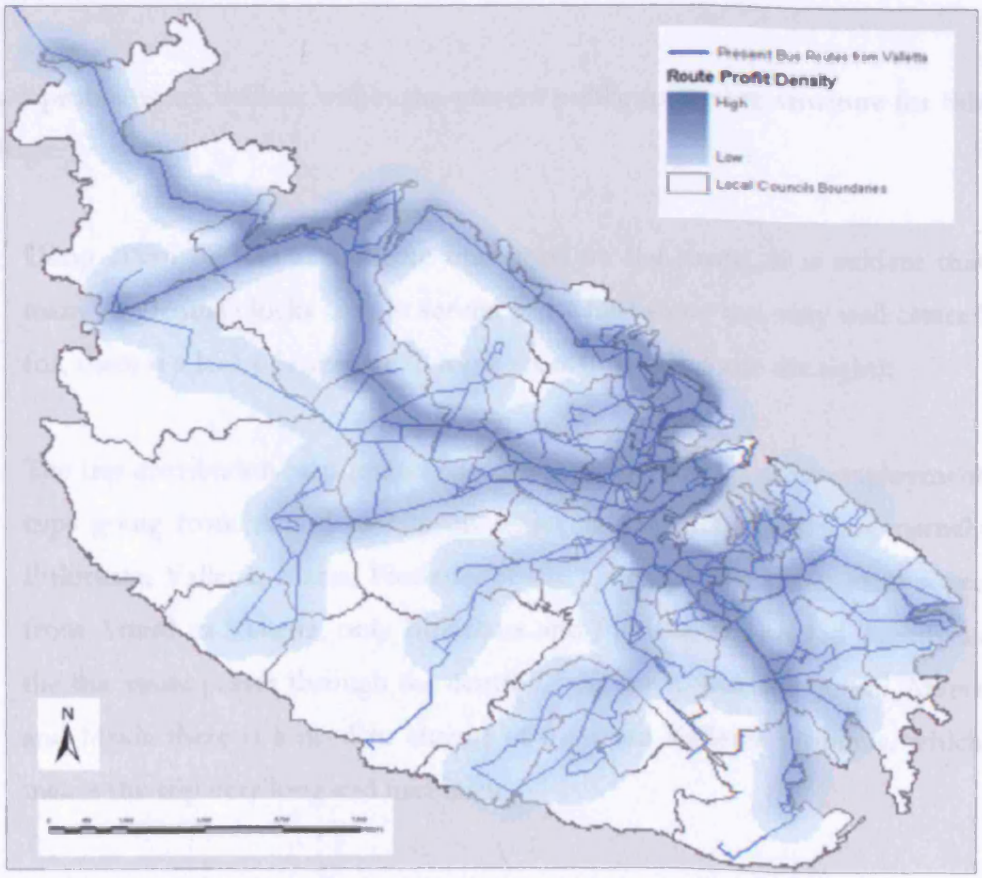
The national regular bus service on the main island of Malta comprises some 400 different private owner-operators, with a total licensed (on the road) fleet of 508 buses. The owners collectively form an Association (Public Transport Association) that is largely responsible for operating the network of services, the periodic rostering of duties and pooling of revenue between the owners. The rostering system has not changed since the 1970s and is based on the principle of each bus working one day 'on' and one day 'off' throughout the year. Theoretically, each bus operator should work in this sector for 182.5 days in a year. This does not happen, however, as the operators (bus owner/drivers) are allowed to run private services in their 'off' days (school transport, private group transport services). The income generated from these services has never been included in the revenue declared to the Government, which then calculates the subsidy to guarantee an income to the owner/operators.

In 1995 the traditional fare-stage based system was changed to a zone-based system. The introduction of travel zones was intended to simplify the travel system, making it more user-friendly for tourists and helping reduce the incidence of passenger overcharging. Over the past 10 years the fare levels have increased two-fold but are still considered very low by European standards. The fare increases never followed a particular pattern such as that of inflation, nor were they increased on a regular basis. Fares increased in 1993, 1995 and 1999. It has always been government policy to keep fares as low as possible in order to attract passengers. Daily and weekly bus passes were introduced at a higher price, making tourists the only users of such schemes. New ticketing machines were installed in 2004 on all vehicles in service and a new microchip travel-card was introduced to facilitate pre-paid travel.

The government's policy to place strict public service obligations on operators of the regular bus service means that only 40 per cent of the 91 bus routes are actually profitable (Sutton 2000). The profit-making routes are those servicing tourist areas near the coast, such as Sliema and St Paul's Bay (found on the north coast of the island) (Public Transport Authority 2000). Figure 3.10

represents the profits for individual bus routes. The profitability of each route was calculated using 1999 revenues and costs and by taking an average between summer and winter daily profits (Public Transport Authority 2000). Since all revenue is collected in a single fund, revenues from the profitable routes cross-subsidise the unprofitable ones. However, since 1995, the network of services has been operating at a loss and depending more heavily on government subsidy.

Figure 3.10 Present bus network and profitability density based on daily revenues (excluding direct bus routes which do not go to Valletta). Author's own calculations.



There is no comprehensive planning of the bus network on the part of Government and the operators have been reluctant to invest in new technology and human resources. Some of the routes have been running unchanged for more than five decades and have become redundant. One such example is bus route number 40, which serves the outlying village of Attard. This village has 98 per cent of its households owning one or more cars. It is served by one bus route with a frequency of 15-30 minutes. It runs via the village centre with poor area coverage and has suffered major losses in patronage over the years. Figure 3.11 shows the existing public transport situation in the village. The map detail at the bottom left shows the employment trip distribution map for Attard residents.

Two problems are evident within the present public transport structure for this village:

- Using 100m buffers around the bus stops on the route, it is evident that many residential blocks are not served and whilst some are very well catered for, there is a lack of coverage in most areas (main map on the right);

- The trip distribution map (map detail at bottom left) shows the employment trips going from Attard to various major employment locations, namely Birkirkara, Valletta, Marsa, Floriana, Msida, Qormi. With the present route from Attard to Valletta, only Birkirkara and Floriana are served directly as the bus route passes through the centre of the town, but for Qormi, Marsa and Msida there is a need to change at the main Valletta terminus, which makes the trip very long and inefficient.

Within the present structures of public transport provision and public service obligations, this route still continues to operate on a 15 – 30 minute schedule (according to the schedules published by the Public Transport Association). It is considered one of the many social routes serving the outlying villages and incurs a large loss every year (estimated in 1999 at €82,241). Minimal changes to the route (middle map detail on the left side of Figure 3.11) would result in the availability of bus services to new clients, whilst other measures aimed at improving efficiency and support linkages at particular stops with other routes, would improve the public transport service from Attard.

The fact that Attard has a high car ownership should not act as a deterrent to the provision of more efficient and accessible public transport. Achieving the objective of modal shift should start by providing a better bus service in all areas. Consequently, efforts to restrain car use can be introduced and bus use encouraged.

One of the major drivers behind changes to the public transport service is the increasing subsidy. This was introduced in 1995, in reflection of the reduced patronage and obligations imposed by the Government on the public transport operators. State aid and assistance were therefore given to this sector in a number of operational areas. These included:

- an annual guaranteed income (a revenue deficit subsidy)
- financial assistance for the purchase of new buses
- procurement of bus ticketing machines and equipment for a national ticketing system
- reduced levels of registration tax on new vehicle importation
- operational assistance in dispatching buses (a number of transport assistants are employed by the Malta Transport Authority to assist in bus termini)
- provision of regular bus service infrastructure such as bus stops, bus stations and travel information (Sutton 2003).

In addition to the problems of heavy state financing, the public transport service is likely to have problems with the European Union transport *acquis* in a number of areas. Pearce (2000; 2001) suggested a number of issues, amongst which:

- the necessary financial standing of a public transport operator required under Council Directive 96/26 is likely to force the existing owner-drivers together as no single owner would be able to support his operations with enough financial stability required to be awarded public service contracts;
- the existing system of state aid, which is not based on service contracts linked to, for example, social routes, but instead covers the whole network of services and hence is based on non-specific reasons for subsidy;
- the extent to which the aid goes beyond compensation of actual operator-incurred costs, for example, the subsidisation of new buses and purchase of ticketing machines by government;
- the private services which the current operators are allowed to run during their off-days without declaring that income for calculating the subsidy;
- failure following Vehicle Roadworthiness Testing of old buses (this requirement has now been removed and only new buses will be subjected to testing);
- lack of access to public transport for people with disabilities;
- the number of subsidised new buses when only half are used daily on the public transport service (thanks to the day-on and day-off shifts); and
- the number of driver hours per day (16 hours a day) which would not be allowed under EU social legislation on length of driving hours.

With the harmonisation of Maltese laws to those of the European Union a general upgrade of the service is expected, but this alone is unlikely to bring about a reversal of trends in the rising car use and declining public transport patronage. Operational and service improvements will have to be complemented by strong political decisions on car use restraint. Unfortunately,

in a country that has been accustomed to the convenience of car travel, persuading people to travel by bus will not be an easy task.

Changes to the public transport service operations in Malta are considered an integral part of achieving the objectives of a sustainable transport system. Therefore, in addition to the current situation presented in this chapter, a comparative review of European public transport practices discussed in Chapter 4 will serve as the basis for proposals made in Chapter 6 for better public transport operation, in line with sustainability principles.

3.3.2 Other modes of public/private transport in Malta

Around 300 owner-operators of minibuses and some 70 owners of coaches carry out unscheduled private transport services (these figures exclude the scheduled buses carrying out private work on their days off). It is estimated that around 650 persons are employed in these sectors alone. In recent years the Government has controlled the number of licensed coach and minibus operators to prevent market disturbance from casual operators entering the market only during the peak summer months, taking advantage of the sudden influx of tourists and using untrained drivers and low quality vehicles. Over the past few years this control of licences has enabled existing operators to acquire sufficient turnover to facilitate the replacement of old vehicles with modern, fully equipped and more environmentally friendly ones (Sutton 2003).

Fairly recently a number of coach owner-operators have formed themselves into a co-operative in order to be able to compete more effectively with the larger companies. They operate occasional services, mainly involving airport transfers and organised sightseeing excursions around Malta. Given the short local distances to travel anywhere, the hiring of such services is usually for less than eight hours. This co-operative also provides regular services for school children, under contract with the education authorities. In addition to coach

and minibus owners, other operators such as owners of buses used in the scheduled services also carry out school transport.

Over recent years an increasing number of workplaces have organised contracts with different providers of regular transport services for workers (mainly blue-collar factory workers) between their homes and their workplaces (Sutton 2003). However, more specific data on the number and location of these contracts is not available.

The white taxis are another mode of public transport in Malta and are found in designated taxi stands in major tourist areas. Government restricts entry to the market and the current white taxi owners act as an influential pressure group to reduce bus services in certain areas and maintain very high fees through informal agreement between themselves (and through their Association). This was identified in the first report by the Public Transport Authority in 1993: "*Taxi drivers have so far shown no inclination to reduce their fares which, by comparison to most other countries, are very high*". Talks are in progress with the operators, even though it is evident that this sector is not a priority for Government. White taxis are considered to be very expensive, and unless government enforces lower fares or allows free competition, both locals and tourists will opt for buses (Attard and Hall 2004). Public service garages also offer taxi services (black taxis) which are on demand and have fixed prices. These services are generally used on contract with tourist operators and hotels.

Horse-drawn cabs are another form of public transport service for tourists around particular cultural sites, such as Mdina and Valletta. The number of horse drawn carriages had increased to 100 in May 2003, an increase from 80 registered cabs in 1993 (Statistics Unit 2003; Public Transport Authority 1993). Since the service is unregulated, there are no standard charges and competition for clients is very low as cab drivers purposely agree on charging very high fees. They organise themselves at locations where they take clients in turns. The

Authorities as such receive a large number of complaints about overcharging about this sector, particularly from tourists (Public Transport Authority 1993).

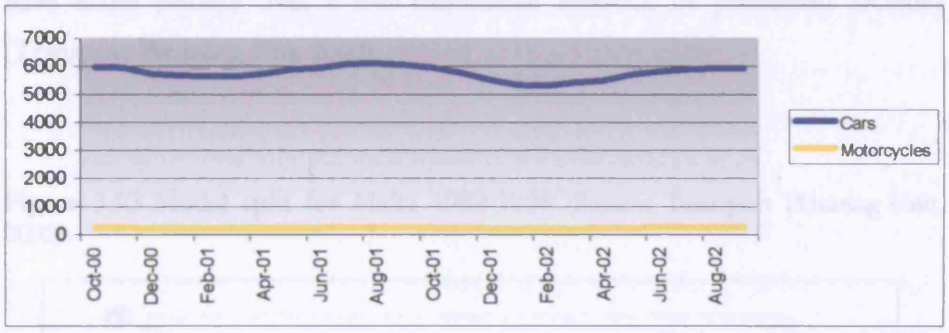
Tourists and locals can also opt for vehicle rental, including motorcycles, cars and minivans. This sector supposedly operates as a free market as a matter of policy, although most of the public service garages have formed an association - the Rent a Car Association. All major international rental companies are represented in Malta, together with a larger number of small local businesses that run vehicle rental services in tourist areas. Table 3.8 indicates estimated tourist use of hired cars by season in Malta. These figures also indicate the number of cars added to the road network as a result of tourists. Hence this increases the pressure for more road and parking space.

Table 3.8 Tourists making use of a hired car by season. Source: Planning Authority, 1997.

Period	1998	1999	2000
Summer	129,000	132,000	133,000
Winter	68,000	68,700	69,000
Shoulder months	132,000	136,700	136,200

Concerns raised recently at an informal meeting with the Association General Secretary suggest a saturation of the market through the licensing of an increasing number of public service garages (Mallia 2003). This statement, however, is not supported by statistics. Figure 3.12 shows an overall stability in the number of licensed rental cars. There are also not enough data and information to calculate the levels of saturation of a particular market and it was suggested that more efforts be made to collect the information necessary for improved planning and policy making.

Figure 3.12 Number of rental vehicles for the period October 2000 to September 2002. Source: Statistics Unit, 2002.

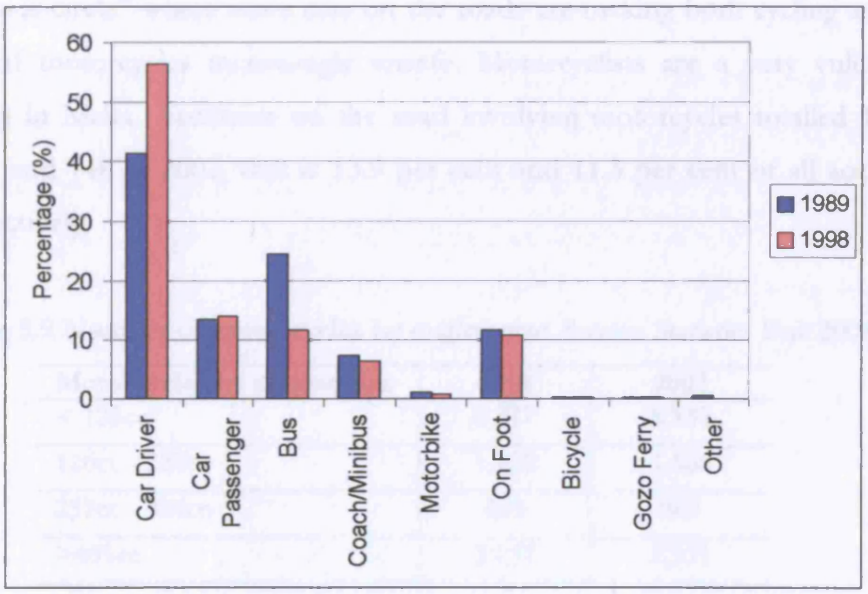


Another form of passenger transport occurs over the sea. The Sliema-Valletta ferry service operates between Sliema and the city. In contrast with the Cottonera-Valletta Ferry Service (which was withdrawn due to low patronage), this service has met with relative success, carrying over 157,000 passengers in its first 18 months of operation (Public Transport Authority 1993). Updated data are not available, but it can be assumed that thanks to a reduction in the number of tourists and the competition from other forms of transport, the patronage has declined. This sector is run privately and the Authority does not have any particular role, except in the safety of passengers carried. There is also a question as to whether the Malta Transport Authority could in any case be the competent regulatory body, as the Malta Maritime Authority generally has regulatory control over maritime matters.

The most environmentally friendly modes of transport have retained a basic level within trip making (Figure 3.13). Walking has reduced from 11.6 to 10.8 per cent whilst cycling has retained the same share (0.3 per cent) between 1989 and 1998 (Transport Planning Unit 1998). The Household Travel Survey results show that over the ten-year period between 1989 and 1998 the major shift was of bus users changing to car use. The contribution walking makes to modal choice was also identified in the current Structure Plan for the Maltese Islands

in 1992. However there has been very little enhancement of the road environment to promote walking. Unfortunately, improvements to traffic flow have taken priority over a well-maintained network of pedestrian facilities (Transport Planning Unit 2002).

Figure 3.13 Modal split for Malta 1989-1998 (Source: Transport Planning Unit, 2002)



A very low proportion of daily trips are undertaken by bicycle. Those that are made are mainly by enthusiasts and village residents. Within the narrow inner-village roads, traffic can be light and slow moving, and therefore cyclists can use car free alleys and lanes to move around the villages. The major concern for cyclists on the main roads is safety because of the lack of dedicated cycle lanes. In Malta promoting a change in behaviour towards greater use of modes such as cycling is very difficult. This can be seen from the behaviour of the population in general. The Government has made no attempts at introducing cycling infrastructure, as the population has not demonstrated an inclination towards its use. This subject will be further discussed in Chapter 6.

Motorbike use is also affected by the same problems of safety. Even though there are increasing numbers of motorcycles licensed on the road, making up five per cent of the total road traffic on the island (Table 3.9), the road infrastructure does not provide specifically for them, for example by offering priority at junctions. Unlike in other Mediterranean countries, such as Italy and Greece (where the driving age of motorcycle users is 16), motorbike and moped use has not developed as part of the youth culture. There now appears to be a "vicious circle" where more cars on the roads are making both cycling and the use of motorcycles increasingly unsafe. Motorcyclists are a very vulnerable group in Malta. Accidents on the road involving motorcycles totalled 172 in 2001 and 148 in 2002, that is 13.9 per cent and 11.3 per cent of all accidents respectively.

Table 3.9 Number of motorcycles by engine size. Source: Statistics Unit 2003.

Motorcycles by engine size	2001	2002
< 125cc	8,377	8,539
126cc - 250cc	1,430	1,466
251cc - 400cc	889	888
>401cc	2,133	2,331

3.4 Conclusions

The overview presented in this chapter has explored the current situation and identified the issues associated with mobility in Malta. The difference in transport pricing is evident from the analysis of the actual transport costs and the revenues generated by government from transport sources. There are also the issues of an extensive road network which requires urgent maintenance and the need for a reform of the bus service routes and their operation. Some of these problems are recurrent and had been identified as early as 1993. They also reflect some of the problems in other countries. It will be evident though that the case of Malta, as for any other place, is unique because of the many different factors influencing transport policy.

4.0 Achieving a sustainable land transport policy – the wider context

Malta, as a new member state of the European Union, has obligations towards transport policy which were previously considered secondary. It now has a dual role as a participant in the debates on sustainable mobility and is at the receiving end of EU directives and regulations when these are approved. The previous chapters identified the historical development and current problems of transport in Malta. As an EU member state, however, the objectives for transport policy need to change to reflect a common framework for sustainable mobility. This chapter will deal with the second objective of this study, which is to place these problems in the wider context of the aspirations of the EU transport policy to achieve environmental sustainability. The topics that are most relevant to Malta are:

- sustainable mobility and transport policy
- the true costs of land transport
- buses and their role in promoting sustainable mobility

The reference in this study to the 'small island state of Malta', reflects the aspirations at the beginning of the study to identify commonalities in the transport problems of island states. Appendix III sets out the reasons why this aspiration had to be abandoned as commonalities were not affected by small island status but by economic development, car dependence and prevailing attitudes towards the use of alternative transport – problems which are common to many countries, not just island states.

The term 'sustainable development' has been used for many years by environmentalists, politicians and government planners without any agreed definition. It is a term that has come to embrace concerns about the social, as well as the physical, environment. These concerns range from the immediate

and short-term – such as health, road safety and social exclusion – to the very long-term – such as the security of energy supplies and climate change. In the absence of convergence on an agreed meaning for the term, 'sustainable' has come to be used rather loosely as an adjective that is applied to projects or policies that are judged to be less harmful than those that they are replacing. Trends and policies that are unsustainable are easier to recognise than those that are definitely sustainable – particularly given the technical and scientific uncertainties about the future.

In addition to concerns about atmospheric pollution in urban areas and climate change, a great number of other concerns have emerged in recent years to which the term has been applied (Zachariadis 2004). One of the major issues on the sustainability agenda is transport (EEA 2002a; European Commission 2001; IEA 2002; WBCSD 2001; World Bank 1996; European Commission 2004).

Motor vehicles consume one-third of the world's oil output and contribute 14 per cent of global carbon dioxide emissions (Mackenzie and Walsh 1990). The continued growth of motorised transport appears to be unsustainable for three main reasons identified by Wegener and Greene (2002):

- *"the degradation of the local and global environment;*
- *consumption of non-renewable resources that appear to be essential to the quality of life of future generations; and*
- *institutional failures that exacerbate the previous two problems (for example, traffic congestion, which increases pollution and fuel consumption but also generates demand for more infrastructure and its consequences, such as further urbanisation of land and still more vehicle travel)."*

While technological innovation may help tackle certain environmental problems, the damage caused by the intrusion of infrastructure and vehicles into neighbourhoods and communities cannot be addressed so easily. Jacobs

(1961) referred to the destructive effect of the car "*replacing, in effect, each horse on the crowded city streets with half a dozen or so mechanised vehicles, instead of using each mechanised vehicle to replace half a dozen or so horses. The mechanical vehicles, in their overabundance work slothfully and idle much. As one consequence of such low efficiency, the powerful and speedy vehicles, choked by their own redundancy, don't move much faster than horses.*"

4.1 Sustainable mobility and transport policy

A definition of sustainable mobility was provided by the EU Transport Council in *Towards a thematic strategy on the urban environment* in April 2001 (European Commission 2004). This communication identifies certain *unsustainable* trends. It recognises that traffic has significant impacts on the environment and health of urban citizens and the overall quality of life in towns. But it also notes that rising congestion levels are hampering mobility and increasing the cost to the economy; estimated to increase from 0.5% of the Community GDP to 1% by 2010 – an estimate published in the European transport policy *White Paper for 2010: time to decide* (European Commission 2004). This concern is an example of an unresolved tension commonly found in debates about sustainable transport which remained unresolved in the OECD's Environmentally Sustainable Transport (EST) project (OECD 1999). The Project noted the close and durable correlation between economic growth and traffic growth and observed that there was a need "for exploration of the concept of 'uncoupling' of transport activity and economic activity and its relevance to sustainability." Unfortunately, six years on, there is little progress to report in this exploration.

This is a problem that Britain's Royal Commission on Environment Pollution wrestled with in its 1994 report *Transport and the Environment.* This report raised the profile of transport problems, stating that "*the unrelenting growth of transport has become possibly the greatest environmental threat facing the UK, and one of the greatest obstacles to achieving sustainable development.*" The first objective of a sustainable

transport policy, it stated, should be to integrate transport policy with land use policy and give priority to "*minimising the need for transport*". But, like the later efforts of the EU and the OECD, it weakened the force of this objective by setting it in the context of the need "*to strike the right balance between the ability of transport to serve economic development and the ability to protect the environment.*" The report also placed a strong emphasis on the importance of a shift to less environmentally-damaging modes of transport. The fact that, in the 11 years since this report was published there has been in Britain, and throughout Europe, a pronounced shift to more damaging modes of transport suggests that the balance continues to be struck more in favour of economic development than of the environment.

Adams (1999) has suggested an extensive list of social impacts of 'hypermobility' ranging from social polarization and road accidents, and poor health, to problems of policing and governance. These impacts are rarely given due importance or even mentioned in most definitions of sustainable mobility. Such issues are also routinely ignored in EU discussions on sustainable transport. There is a great emphasis on the environmental versus the economic benefits, but very little is said about the social implications.

Sustainable mobility is an aspirational term that calls attention to the need to shift away from the traditional transport planning approach, which conceptualises transport as a derived demand and as a support infrastructure for economic growth, towards a policy approach that is informed by evidence and risk assessment and which recognises the pitfalls of unconstrained growth (Giorgi 2003).

Today, although the sustainable mobility discourse is playing an increasingly important role in debates about transport and mobility, there is still little to show by way of achievement. Transport demand continues to increase with no signs of 'decoupling' from economic growth. The reluctance of public administrations to invest in sustainable mobility measures has tended to

aggravate the situation, with most politicians seeming to prefer environmental suicide to what they consider would be an act of political suicide, if they were to attempt to implement such measures (Adams 1994).

In addition to this, the relative strength of air and road lobbies vis-à-vis the much weaker representatives of public transport, walking, cycling and waterborne interests has contributed further to the difficulties of implementing sustainable mobility.

Many academics have criticised the term 'sustainability' as a very flexible concept which can be used to justify many policies which are definitely not sustainable (for example, Whitelegg 1993). And with respect to transport, traffic problems continue to worsen and the overall quality of the environment has continued to deteriorate. The reaction to these impacts by the population at large shows support for traffic restraint and more public transport (see, for example, Jones 1991 and European Commission 2002a). This will be discussed later in Section 4.1.6. Despite this, governments still promote road construction projects, with the European Union's main transport objective being to fund and improve the Trans-European Transport Network (European Commission 2001). This includes a substantial effort seeking to remove bottlenecks on the main road network – maybe one of the few remaining restraints left to control unsustainable traffic growth.

Sustainable mobility as a vision or aspiration, on the other hand, is effecting a change of thinking by some policy makers and key stakeholders. Goals like environmental protection and ideas like participatory democracy, which were foreign to the minds of transport planners not so long ago, are now establishing themselves on the transport policy agenda. Despite this, there is still a need for some guiding principles, if 'sustainability' is to become more than green rhetoric.

Such principles, like those suggested by Whitelegg (1993) and reproduced in Table 4.1, reflect a need for better administrative structures and processes. They

are evidently necessary, but again very few, if any, have been transposed into actual government programmes. Some of his proposals suggest a step back from what has come to be associated with progress by encouraging "*locally based social interaction and locally based economic activity*". This could be considered impossible because of the prevailing forces of globalisation and because of blocs such as the EU, which promote increased trade across boundaries, particularly for new member states. In addition, the pursuit of independent transport policies following the principles listed in Table 4.1 will be difficult for countries which are small and have limited financial, and more importantly human, resources such as Malta.

It is evident that there is a need for change in the way transport policy is formulated and implemented, with the European Union having the potential, in principle, through the concept of subsidiarity to help local governments to pursue local priorities. In practice this is not happening.

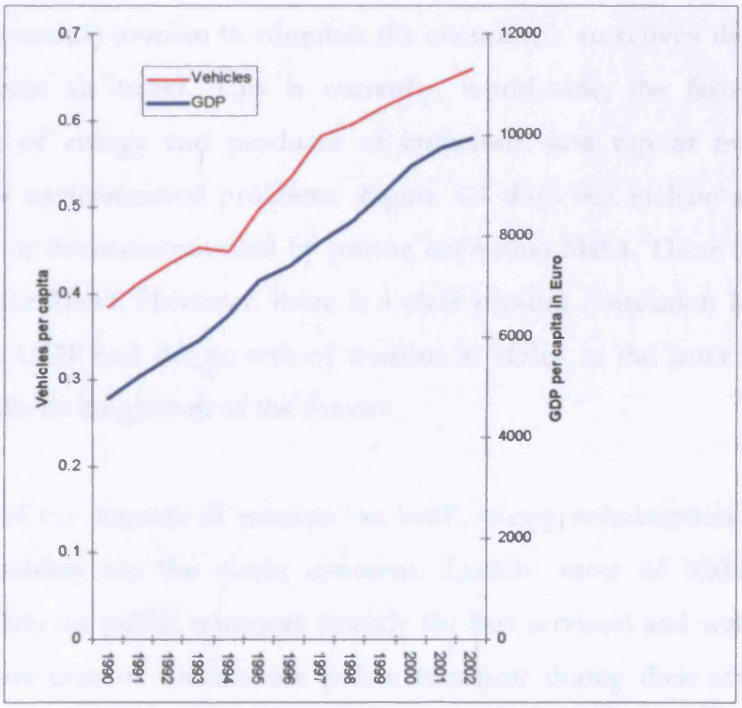
Table 4.1 Guiding principles for sustainable transport and their applicability to Malta. Source: Roberts et al, 1992 quoted in Whitelegg, 1993.

Principles for sustainable transport	Malta's current situation
1. Transport is a vital element in economic and social activities but must serve those activities rather than be an end in itself.	1. The provision of transport was driven by predicted demands with very little integration with land use planning.
2. The consumption of distance by freight and passengers should be minimised as far as possible whilst maximising the potential for locally based social interaction and locally based economic activity.	2. Malta's size restricts long distances however; the complex land use patterns developed over time led to complex travel patterns requiring an extensive road network which was encouraged more than public transport.
3. All transport needs should be met by the means that are least damaging to the environment.	3. Government still favours private mobility over large investments in public transport.
4. There should be a presumption in physical land use planning against those activities which by nature of their size and importance attract car-based users from a large area.	4. The Structure Plan (1992) encouraged integration of land use and transport planning but there is little evidence of this over the past decade.
5. All transport investment plans should be subjected to a full health audit notwithstanding the uncertainties surrounding epidemiological proof. Proposal which are potentially health damaging should be rejected.	5. As an EU member state the Government has to commission environmental and transport impact assessments for major transport projects, particularly those funded by the EU Structural Funds.
6. All transport investment plans should have clear objectives designed to cover social, economic and environmental concerns and be evaluated by an independent authority with sufficient expertise to comment on value for money, costs and benefits and the availability of alternative strategies to achieve the same objectives.	6. Despite the requirements for impact assessments and safety audits, transport projects are not evaluated further to search for alternatives which would deliver similar objectives. Financial and human resources restrict this kind of assessment.
7. All transport investment should be monitored over their lifetime to check on the degree to which they meet their stated objectives and their contribution to environmental damage.	7. No monitoring is currently carried out on transport investments. Financial and human resources restrict this kind of assessment
8. All transport policy matters should be dealt with in a transport policy directorate that has no direct responsibilities for the management of individual modes. The responsibilities of the directorate are to deliver sharply focused policies that minimise danger, minimise air and noise pollution, maximise social interaction and urban quality of life and oversee the non-policy making executives (for road, rail and air) whose role is to implement the directives of the transport policy directorate.	8. The transport planning role of the Malta Environment and Planning Authority was not able to communicate the policies of the Structure Plan to the operational units across Government. The Transport Strategy Directorate within the Malta Transport Authority, however, is meant to serve this purpose and provide the policy framework for the other operational directorates (see Section 7.1).

4.1.1 The relevance of sustainable mobility principles to Malta

The trends of motorization and increased motorised mobility found in Malta mirror those of other developed countries. However, Malta's economic growth, coupled with growth in transport demands, has occurred at a faster rate then those of pre-enlargement EU countries (EU15) and within a relatively very short time (Figure 4.1).

Figure 4.1 GDP (in constant prices) versus vehicles per capita in Malta.
Source: NSO, 2003; ADT, 2003



Should the trends in Figure 4.1 continue, the basic access and development needs of both current and future generations referred to in the European Commission's first objective in its definition of sustainable mobility (see page 11) will be seriously compromised. With increased growth in car travel, the impacts of congestion and pollution will outweigh any benefits of private mobility, whilst affecting economies through delays and lack of efficiency. With regard to the second objective (see page 11), the heavy investments on one user

group (the motorist) will undermine the environmentally benign modes of travel, reduce modal choice, and increase social polarisation.

The third objective of reducing energy consumption and emissions (see page 11) has implications that go beyond the shores of Malta itself. Malta is heavily reliant on fuel imports from other countries, as well as imports of vehicles, since there is no vehicle manufacturing in Malta. But the most difficult problem for Malta to address should it seek to meet its obligations as a signatory to the Kyoto protocol is its dependence on tourism. It is currently seeking to promote more (up-market) tourism to stimulate the economy – an activity dependent on long-distance air travel. This is currently, world-wide, the fastest growing consumer of energy and producer of emissions, and top of most lists of intractable environmental problems. Figure 4.1 does not include air travel to and from or distances travelled by private car within Malta. These data are not available for Malta. However, there is a clear positive correlation between the growth in GDP and the growth of tourism in Malta, as the latter contributes substantially to the growth of the former.

In terms of the impacts of tourism 'on land', energy consumption and use of private mobility are the major concerns. Luckily, most of Malta's tourists currently rely on public transport (mainly the bus services) and walking. More than 80 per cent of tourists use public transport during their stay in Malta (Carbonaro 2003).

There are a number of barriers to Malta achieving a less unsustainable transport system. Two objectives of this study, listed on page 10, aim to identify these barriers and suggest ways of overcoming them.

4.1.2 European and international approaches to transport policy

Transport policy has been defined by Tolley and Turton (1995) as *'the process of regulating and controlling the provision of transport to facilitate the efficient operation of the economic, social and political life of the country at the lowest social cost'*. How transport is regulated and controlled is currently one of the most controversial areas of public policy, exhibiting two contrasting views. On one hand, state intervention is deemed essential for efficient policy and, on the other, state intervention is seen as a barrier. Different systems occur globally, but with few examples of deregulation and much public ownership (especially in Europe) (see for example, Pucher and Lefèvre 1996).

Policy encompasses within it regulation, process management of change (such as the design of policy making models and decision-support tools), the (daily) management of transport systems, and the nature of new policy solutions (Van Geenhuizen et al. 2002). A crucial role is therefore that of the institutions regulating national and local transport systems. Moreover, the past decades have seen new driving forces in transport policy making, mostly institutional changes, involvement of a wide range of interests and stakeholders, need for flexible and adaptive governance and the need for integrated policy making in various fields and at various levels (Stough and Rietweld 1997).

Transport policy is required to meet multiple objectives, whose relative importance differs over time and place. Therefore, it is not a straightforward exercise to measure the successes and failures of transport policy today. During the 87th Session of the Council of Ministers of the European Conference of Ministers of Transport, Ministers were presented with a summary of indicators of success and failure. These are represented in Table 4.2.

Table 4.2 Successes and failures of transport policy to date. Adapted from ECMT, 2003a.

Successes	**Failures**
Increases in transport productivity and increasing economic growth - Reductions in trade barriers - Opening of borders - Significant investment in facilities and equipment - a substantial body of law and practice at national and international levels - increasingly trained and skilled professionals in the sector	The system is not sufficiently safe, clean or accessible - 100,000 people killed on roads each year - traffic growth undermines environmental improvements - ageing population having increasing access problems
Transport is faster and cheaper than ever - new technologies have made transport faster, safer, cleaner and cheaper	Transport is not efficient enough - deregulation is uneven between modes - subsidies do not show value for money - congestion - pricing shortcomings - investment shortfalls - incomplete transport chains
Enormous progress at the international level - in understanding and information exchange - in developing agreed approaches and policies	Policy aspirations have been difficult to implement - difficulties arising from lobby groups - difficulties in dealing with social consequences of change - communication failures on the reasons for introducing certain measures - transport institutions fragmented within themselves, between modes and between jurisdictions

Whilst trying to understand the underlying problems related to transport policy, there seem also to be conflicting forces acting within, as some factors are beyond the control of policy making bodies. These are the rate of development, both in terms of population increase and the dependence on the car, and the patterns of social change, reflecting how people have changed their lifestyles. In most cases, EU policy makers and planners have developed fragmented solutions to specific local problems. One of the major problems with European transport policy is the absence of a strategic view of the European transport system as a single entity at all geographic levels. Transport policy makers are

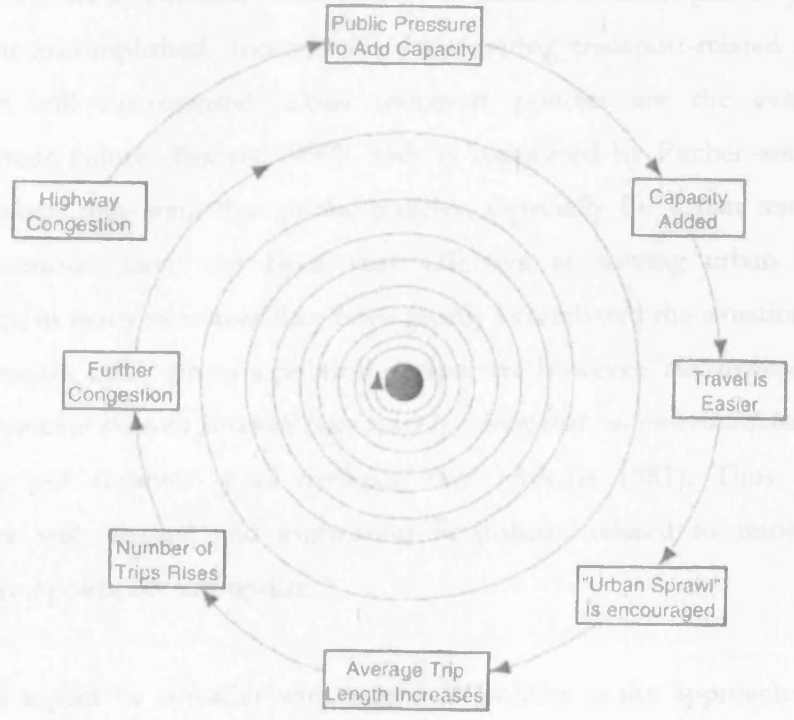
faced with two aspects of planning. On one side there is the environment, which tends to place an upper limit on development, whilst on the other there are the businesses in Europe whose concern focuses mostly on the lack of infrastructure. There is, therefore, a threat of reduced competitiveness in a global context as a result of inadequate infrastructure (Banister et al. 2000).

Transport policy in general has aided the development of private motorised mobility, that is the car, and encouraged its use by providing the space and infrastructure for it (Whitelegg and Haq 2003). There have been two streams of argument on what to do about the car/infrastructure relationship. On one hand there is a need to control car use so that it is in some way kept within bounds defined by broader objectives of traffic or social efficiency. On the other there is the requirement to accept its growth as inevitable and to provide the road capacity necessary to accommodate it (Goodwin 1999). In the report *Traffic in Towns* (HMSO 1963), Buchanan was already arguing about the impacts of the car and the necessity to control it, even though, at any period, the predominant argument was in favour of providing the necessary capacity to match the traffic levels. Nowadays in seems clear in many countries that this policy can never be successfully implemented as the increase in traffic is always going to be faster than the rate of supply of infrastructure. Also, in many countries government budgets are tight, and the implied increasing infrastructural costs are too high.

The rising levels of car ownership and use, together with social change and urban sprawl, have generated a considerable amount of personal travel by car (Hine 1998), patterns of which are increasingly complex, with a trend towards trip-chaining to serve a number of purposes. Hence, provision of public transport for such a demand is becoming more difficult. A vicious circle is therefore created, similar to the black hole theory of highway investment suggested by Plane (1986): the attempt to satisfy demand for travel by increasing the supply of roads forms a positive feedback loop that has been likened to throwing money into a black hole (see Figure 4.2).

The 'predict and provide' philosophy in transport policy meant that road schemes were built, under political pressure, to the detriment of houses and green areas (Owens 1995). This made many transport planners uncomfortable. Plowden (1972), Schaeffer and Scalar (1975) and later Hine (1998) and Adams (1999) all claim that the increase in provision and use of the private car will lead to a widening gulf between people owning a car and the so-called transport disadvantaged. Hamilton and Jenkins (1992) have observed that transport disadvantage is not evenly or randomly distributed throughout society but follows the well-established lines of structural social inequality. The poor, disabled, women, elderly and the young all fall into this category (Plowden 1972; Tolley and Turton 1995). Children have lost their independence and are chauffeured around for every journey they make. To some extent, and in many suburban towns, the age of 'independence' comes with the driving licence and access to the car (Schaeffer and Scalar 1975).

Figure 4.2 The black hole theory of highway investment. Source: Plane, 1986 quoted in Tolley and Turton, 1995.



Over the past 20 years there has been a movement in road transport policy called the 'new realism' in the UK. This is a comprehensive or integrated approach which includes: a planned transfer from car use to improved and expanded public transport systems; better provision for pedestrians, cyclists and other environmentally friendly forms of transport; traffic calming, pedestrianisation, traffic restraint, and traffic management aimed at reduced speed and increased reliability of journey times rather than maximising the throughput of vehicles; and the use of land use planning and development control to reduce journey length and unnecessary car use whenever possible (Hine 1998). To this end, countries have tried to implement demand management schemes to improve mobility and reduce car use.

Several attempts have been made in different European cities to improve the urban environment. Green urban policies have been adopted and various approaches have been used to discuss them (Bonnel 1995). Bratzel (1999) adopts the political science approach to understand success stories related to the greening of urban transport policies. He discusses measures adopted in five European cities and assesses their success or failure. Over the past 30 years little has been accomplished. Indeed, the deteriorating transport-related problems and the still car-oriented urban transport policies are the evidence of government failure (Bratzel 1999). This is supported by Pucher and Lefevre (1996) when they state that public policies, especially for urban transport, in most countries have not been very effective at solving urban transport problems; in many instances they have greatly exacerbated the situation, leading to a transport crisis. From a political perspective however '*that everyone is entitled tomorrow to what the most fortunate enjoy today is a belief that has understandable appeal for politicians and electorates of all ideological hues*' (Adams 1981). Thus, in many countries still, change and innovation in policies related to transport, are considered politically unpopular.

Another aspect to consider with regard to politics is the approach used for implementation. Where a country is strong on democratic ideals, it is generally

weak in realisation (Flyvberg 1998). In democratic countries many governments are elected on the basis of their electoral programs. Impressive mandates are guided by the expectation of what the citizen wants, which in turn gives the decision maker a high degree of freedom in implementing fundamental (environmentally oriented) policy changes (Bratzel 1999). Where these policies go against the popular consensus or there is minimal pressure from peer groups or organisations, there is a set-back in the implementation or realisation of 'different' policies.

The implementation of transport policies nowadays has certain defined approaches. These usually consist of:

- a reduction in traffic volumes;
- improvements in the public transport systems;
- provisions for pedestrians and cyclists;
- pedestrianisation and traffic calming aimed at reducing flows and increasing reliability rather than maximising the throughput of vehicles;
- the control of land use change and new development in such a way as to reduce journey length and car use wherever possible;
- interest in charging people directly for the congestion and environmental damage they cause by using the road (Goodwin 1998).

These policies also stem from the work of economists who have considered, among other things, the wasting of economic resources. It is evident today that providing for movement and, at the same time, reducing congestion, is both economically and environmentally advantageous. Goodwin (1998) describes the effects of implementing two main transport policies which have been most evident in the past thirty years. Pedestrianisation and traffic calming have been regulated by planners and have been adopted in many European cities with a great deal of success, especially in achieving one of two objectives: the creation of a safe, pleasant street environment. The other objective - to reinforce a

general transport strategy encouraging walking and discouraging vehicle use - is much less evident.

Many consider Transport Demand Management as the only means of reducing car traffic. In the US, transportation demand management started in the early 1970s, at federal and local levels, introducing relatively new concepts in urban transportation planning. Table 4.3 highlights the transportation demand management strategies in the US. This was a response to the declining funding for new infrastructure and the environmental consequences of a heavy reliance on the car for personal transportation. Two incidents marked the start of transportation demand management in the US: the oil supply disruptions of the 1970s and the Clean Air Act (Meyer 1999).

By definition, transportation demand management is any action or set of actions aimed at influencing people's travel behaviour in such a way that alternative mobility options are presented and/or congestion is reduced (Meyer 1997). Therefore one important aspect of implementing transportation demand management actions is related to the fact that they focus on changing individual travel behaviour. Even so, the US experience in implementing strict transportation demand management actions is similar to that of other democracies and objections were made by the public as the vehicle restrictions and parking surcharges were seen as an intrusion into personal travel. Thus, Congress repealed the Environment Protection Agency's authority to curtail automobile travel (Altshuler 1979). Political willingness to implement transportation demand management actions that have any significant impact on the cost of car travel is generally not present in most urban areas. From the number of actions which were implemented, especially in relation to the employer's role in controlling car use for work purposes, it became clear that the most effective transportation control measures were those related to pricing, mandatory employer trip reduction programmes and land use planning (Meyer 1999).

Table 4.3 Transport demand management strategies in the USA. Source: Tolley and Turton, 1995.

Transport Planning Process	Management Objective	Main Implementation Strategy		
		Transport	Land use	Other
Trip generation	Eliminate trip entirely			Tele-communications Shortened work weeks
Trip distribution	Shift location of origins or destinations to modify spatial distribution of trips		Zoning policy Re-urbanisation Mixed land use development Transit-friendly design Growth management	
Mode choice	Shift from low occupancy mode to higher occupancy mode	Transit, bicycles, walking facilities High-occupancy vehicle facilities Gasoline taxes Licensing policies	Parking policies	Employment-based ride-sharing
Route selection (spatial)	Shift trip from a more congested route to a less congested route	In-vehicle navigation systems Road pricing		
Route selection (temporal)	Shift trip from a more congested time period to a less congested time period	Congestion pricing		Alternative work schedules (flexitime)

The concept that efficient use of roads requires users to pay for the traffic congestion costs that they impose on urban road networks is long established (Pigou 1920; Walters 1961, both listed in Button 1998). Traffic congestion is typical of urban areas nowadays, and economists agree that the best policy to deal with the problems arising from the increased use of the private car is some form of congestion pricing. This, as suggested earlier, would bring a balance in costs for that particular service. Such policy involves charging a substantial fee for operating a motor vehicle at times and places where there is insufficient road capacity to easily accommodate demand. The intention is to reduce congestion by altering people's travel behaviour (Small 1998). The idea of

congestion pricing and other schemes for charging for road use, such as toll roads and parking taxes, fall under the broader group of policies which is often referred to as road pricing. The interest in such policies stems from the need for new revenue sources for transportation investments and from the failure of alternative policies to reduce the growth in traffic congestion (see also Gomez-Ibanez 1994; Verhoef et al. 1995). However, as Adams (1999) notes, restraint is needed most where growth is fastest, and suppressing traffic only in areas of congestion, such as the recent developments of congestion charging in cities, *produces a centrifugal force which, if not resisted outside cities will result in further sprawl,* encouraging more use of the car.

4.1.3 The development of the European Common Transport Policy

In Europe, motorised mobility has continued to increase and, as the supply of infrastructure has not kept up with growth, bottlenecks have proliferated. Over the past 25 years, the annual travel distance per capita has more than doubled, the number of cars has increased by more than one and a half times, and the increase in the length of motorways has more than trebled. These trends still continue in almost all EU Member States. Extrapolation of these trends indicates increasing problems of congestion and pollution for the future (Banister et al. 2000).

With the creation of the European Economic Community by the 1957 Treaty of Rome came the requirement for intra-Community transport to permit free movement of goods, services, capital and labour. Article 75 of the Treaty of Rome forms the legal basis of the Common Transport Policy by stating that

the Council shall[lay down:

(a) common rules applicable to international transport to and from the territory of a Member State or passing across the territory of one or more Member States;

(b) the conditions under which non-resident carriers may operate transport services within a Member State;

(c) measures to improve transport safety;

(d) any other appropriate provision (Official Journal C340)

There are three phases in the development of the Common Transport Policy (1957 – 1985, 1985 – 1991 and 1992 – today). Between 1957 and 1985 the Common Transport Policy did not amount to much more than the stated intention to facilitate transport between the Member States. The Council of Ministers of Transport was used primarily for the exchange of ideas. However, the White Paper *Completing the Internal Market*, published in 1985, identified restrictions on the provision of transport services as a serious barrier to open trade. Following support by the European Court of Justice in favour of more co-ordination and the harmonisation of regulation, an intense process began the elaboration of directives at European level concerning the removal of barriers to competition in the field of economic activity and market access. Between 1985 and 1991 more than a dozen directives and regulations were initiated.

The 1992 White Paper *The Future Development of the Common Transport Policy* followed as the next major development in the European Transport Policy. This included a set of objectives to be achieved by the Common Transport Policy relating to sustainability and social cohesion. More specifically it called for:

- the continued reinforcement and proper functioning of the internal market, facilitating the free movement of goods and persons throughout the Community;
- a transition from regulation towards the adoption of balanced policies favouring the development of integrated transport systems for the Community as a whole using the best available technology;

- the strengthening of economic and social cohesion by the development of transport infrastructure to reduce disparities between the regions and to link peripheral regions with the central regions of the Community;
- measures to ensure that the development of transport systems contributed to a sustainable pattern of development by respecting the environment and, in particular, by contributing to the solution of major environmental problems such as the limitation of CO_2;
- actions to promote safety;
- measures in the social field;
- the development of appropriate relations with third countries, where necessary giving priority to those for which the transport of goods, or persons is important for the Community as a whole (Schmidt and Giorgi 2001).

A major criticism of the 1992 White Paper was its failure to define sustainable mobility. It went only as far as to say that the tools for achieving it are *efficient safe transport under the best possible environmental and social conditions.* A phrase which could have meant the best that the economy and the society could achieve, without disrupting its current practices.

The identification of transport as an important means of reducing the economic disparities between regions led to the birth of the Trans-European Transport Networks. In 1994 14 priority projects were identified for which European funding would be made available to cover missing links or bottlenecks in the European transport infrastructure network. Since 1996, and in the context of the south-eastern enlargement of the Union, attention has shifted towards the expansion of the Trans-European Transport Network towards the East and the Mediterranean through the corridor plans and networks identified by the Transport Infrastructure Needs Assessment (TINA Vienna 1999). This exercise was also extended to Malta, with a report to Government in 2002 identifying the sections on the main road network requiring re-construction and

maintenance that would benefit from European funding (see section 3.1). Also, the integration of environmental concerns in the Common Transport Policy led to the application of the term sustainable mobility to the adoption of standards for atmospheric emissions, noise levels from aircraft and minimum excise duties on fuel, among others. Recognising the limitations of 'demand and control' measures for environmental protection and the need to accompany these with economic measures, the 1998 White Paper *Fair Payment for Infrastructure Use* was published in an effort to harmonise pricing of transport infrastructure across Europe.

During these years, the Commission sought to take up a co-ordinating role in financing research and diffusing best-practice experience in the various sectors, including urban transport. Despite all this, the Commission was only successful at removing trade barriers to competition, thus following the trends established in the former period (1985-1991). The achievements of the Common Transport Policy in the adoption of regulations and directives on, for example, haulage (freight) services (Council Regulation 3118/93) and market access for road transport (Council Decision 881/92) were mostly the result of agreement among Member States (at the level of Council of Ministers of Transport) at least since 1985 (Schmidt and Giorgi 2001).

The new White Paper published in September 2001, *European Transport Policy for 2010: Time to Decide* (European Commission 2001), was more comprehensive, outlining explicitly for the first time the Commission's diagnosis of the problems at hand and their interrelations, and also proposing solutions. The main elements of the White Paper are divided into four, namely:

- Shifting the balance between modes of transport
- Eliminating bottlenecks
- Placing users at the heart of transport policy
- Managing the globalisation of transport

Within these four goals lie the new concerns of the Common Transport Policy. First is the proposal to develop the so-called 'motorways of the sea', to link up modes of transport and shift land transport to sea. Second, work started on funding specific infrastructure projects to eliminate bottlenecks on the network and launching a discussion about the definition of environmentally sensitive areas with regard to transport. Also, for the first time, a specific focus is set on urban transport with regard to pollution and the promotion (and funding) of good practice for towns and cities (for example the CIVITAS initiative) (European Commission 2001). The Community initiatives on urban transport have been summarised in a recent communication, *Towards a thematic strategy on the urban environment* (Table 4.4). Most have dealt with encouraging mobility by promoting technological fixes in vehicles and fuel performance and extending the Trans-European Network programmes. There has been no 'sustainable' initiative that promotes local travel, more environmentally friendly modes of transport and above all actual reduction in the use of motorised vehicles. This is reflected in the current *acquis* and transport projects funded by the European Union in the new member states, including Malta.

Table 4.4 Current Community initiatives for urban transport as listed in the Thematic Strategy under sustainable transport. Source: European Commission, 2004.

- *The 2001 White Paper highlights that European transport policy has reached a critical point where clear, well-functioning and less fossil fuel based urban transport systems are considered an indispensable condition for achieving the Community's overall objective of sustainable mobility.*
- *The need to rationalise* (reduce) *private car use and to improve urban transport, which is an important energy consuming sector, is highlighted in the Commission's Green Paper on the security of energy supply.*
- *A work programme of specific and practical actions in the field of clean urban transport is promoted through projects such as CIVITAS.*
- The proposed *Directive on electronic charging systems will ensure the interoperability of road-toll systems across all areas of the EU.*
- A number of directives are being prepared on public transport, including one on the *promotion of energy efficient and clean vehicles* and another on *the introduction of controlled competition in public transport.*
- *The Commission's support for the development of the Trans-European transport networks* aims to *have a considerable impact on the interfaces with urban areas.*
- *A considerable body of EU legislation concentrates on improving the technical quality of vehicles* in the fields of air quality standards, fuel standards, noise emissions and roadworthiness testing.
- *In 2003 the Commission adopted a European Road Safety Action Plan Programme which will contribute to reducing urban traffic fatalities.*

There is still however lack of integration into a Common Transport Policy. There are parts of the Union where policies seem more enlightened than others – both nationally (for example, the Netherlands) and locally (for example, the bicycle city of Groningen). But these are 'islands' in a much larger area, and until EU policy enforces sustainability measures, these successes will not be enough to counteract the trends of increasing motorization. The overall drive which dominates European Union policy is to make the economy bigger and encourage more development. Therefore the attitudes within it are to retain the

existing patterns of resource consumption. The Common Transport Policy has many critics, among them John Whitelegg, who dismissed it as an ineffective policy, pursued in an indifferent manner, based on simplistic economic notions (Whitelegg 1988).

4.1.4 The European Conference of Ministers of Transport (ECMT)

The ECMT was founded by 16 European Transport Ministers in 1953. Its roles are to:

- help create an integrated transport system throughout the European continent that is economically and technically efficient, meets the highest possible safety and environmental standards and takes full account of the social dimension;
- help build a bridge between the European Union and the rest of the European continent in the transport sector at a political level; and
- provide a forum for analysis and discussion on forward looking transport policy issues for all Members and Associated countries (ECMT 2003a).

Today ECMT has 43 members (Malta formally joined in 2002). The Council of the Conference comprises the Ministers of Transport and is the main body of the Conference. Working groups within the Committee of Deputies prepare proposals for consideration by the Council of Ministers. These Working Groups focus on such topics as:

- Access and Inclusion
- Combating Crime in Transport
- Combined Transport
- Economic Research Committee
- Fiscal and Financial Aspects of transport
- Road Safety
- Road Transport

- Statistics
- Sustainable Urban Travel
- Transport and Environment

During its fifty years of operations, the ECMT has provided a number of resolutions which are now enshrined in legislation in the European Union *Acquis* or in conventions or agreements in the United Nations Economic Council for Europe (UNECE) and elsewhere. The reports, recommendations and resolutions represent a large body of experience and knowledge available to policy makers, experts and the public. Examples of recommendations include over thirty recommendations just for Road Safety plus others on Environment, Accessibility for old and disabled people, economic instruments and on Crime and pan-European integration. The resolutions and recommendations are decided by the Council of Ministers for Transport. Monitoring the actual implementation of these recommendations is one of the stated future priorities of the Council (ECMT 2003b).

Within the scope of this study the knowledge base of the Council was utilised for the policy proposals suggested in Chapter 6. These included aspects of environmental impact, road safety, urban transport and mobility handicaps (access and inclusion). There are, however, a number of resolutions which are very important and could be transposed directly into national legislation. Some examples of specific resolutions which Malta could adopt are listed in Table 4.5. Following Malta's accession to the European Union and as a full member of the Council for Transport Ministers, the government will require to participate to some degree in the debate and the adoption of recommendations suggested by the Conference.

Table 4.5 Examples of ECMT recommendations which could be adopted in Malta. Compiled by the author. Source: http://www1.oecd.org/cem

- ECMT Resolution No. 97/5 on [safety for] cyclists
- ECMT Resolution No. 91/3 on the improvement of road safety for the elderly
- ECMT Resolution No. 56 on advertising which conflicts with road safety aims
- ECMT Resolution No. 54 concerning the fitting and wearing of seat belts on the rear seats of cars and safer transport of children and adults
- ECMT Resolution No. 37 on driver training
- ECMT Resolution No. 98/1 on the policy approach to internalising the external costs of transport
- ECMT Resolution No. 51 on school transport (CM(84)8 – 2nd revision

4.1.5 Shifts in transport policy rhetoric

The British example is used in this study to understand the extent of shifts in the rhetoric of transport policy. Even though major policy changes have occurred over the past decades, no single factor has been strong enough to affect a paradigm shift at either local or national levels, despite the changes in rhetoric (Vigar 2002).

Change came about in the early 1990s, with growing concern over the impact of transport on the environment. In April 1989 the scale of the problem was confirmed when the Department of Transport published a new national road traffic forecast which suggested that traffic flows would double by about 2025. As the practical implications of these forecasts were absorbed, especially for road building, they heightened the already growing concern over the impacts on the environment (Glaister et al. 1998). This argued against the 'predict and provide' philosophy of the 1980s and paved the way for the 1990s where

challenges came from increasingly 'legitimate' sources such as the Standing Advisory Committee on Trunk Road Assessment (1994). The initial resistance by Government was eventually overcome as other factors came into play and a degree of learning on the part of the policy community itself took place. Also, the move towards a 'new realism' in transport policy (Goodwin et al. 1991) was inevitable. The recession of the early 1990s reduced the resources available for road building and underlined the impossibility of meeting the aspirations of plans like *Roads for Prosperity (1989)*. In publishing the Planning Policy Guidance (PPG13) - Transport in 1994, the Government aimed at integrating land use and transport in view of the problems associated with increasing infrastructure supply.

"The Government recognises that forecast levels of traffic growth, especially in urban areas, cannot be met in full and that new road building or the upgrading of existing highways will in some cases be environmentally unacceptable. It is already Government policy not to build new trunk or local roads simply to facilitate commuting by car into congested urban centres" (Department of Transport 1994).

In opposition, in 1996 the Labour Party committed itself to a radical overhaul of transport policy towards a more environmentally sensitive strategy that minimised the role of road building and of the car (Docherty 2001). This continued in the early months of the Blair government, with the Deputy Prime Minister making bold statements on their aspirations for transport policy:

"I will have failed if in five years time there are not many more people using public transport and far fewer journeys by car. It is a tall order but I urge you to hold me to it" (John Prescott quoted in *The Guardian*, 6th June 1997).

Whilst replacing 'predict and provide', the Labour government still managed to introduce large-scale network expansions. Also, with the publication of *A New Deal for Transport* (Department for the Environment, Transport and the Regions 1998) the policy discourse and measures highlighted in the documents were

relatively modest (Docherty and Hall 1999). The explanation for this was the complex ways in which social, cultural, technological and political factors combine to underpin a culture of automobility (Sheller and Urry 2000). The Labour government eventually withdrew its commitment to reduce traffic growth and tackled congestion as the main focus of central and local government efforts (Vigar 2002).

The learning process for policy makers and communities plays a very important role in changing policy. The congestion and past road building efforts that failed to tackle long-term traffic congestion led to a degree of learning among the community that more road building would not alleviate congestion. Therefore, geography is important in ecological and social terms in that 'new realist' policies will tend to emerge in places where the externality effects of transport are presently greatest, as it is in such places that congestion and the environmental consequences of traffic are highest (Mackie 1998). Nevertheless, this also suggests difficulties of implementing new policies with a public (and government) who have not been through such learning processes, but do see congestion getting worse. The UK Government, like the European Union, is still accommodating traffic growth through its policies (see Adams 2004).

Within a 'new realist' approach, success will come from the implementation of a full package of measures reducing car use, commonly held as aimed at paying attention to both the 'carrot' of alternatives to car use and the 'stick' of discouraging car use directly. Failure to implement the whole package will undermine the strategy overall (Flyvbjerg 1998; Goodwin 1996).

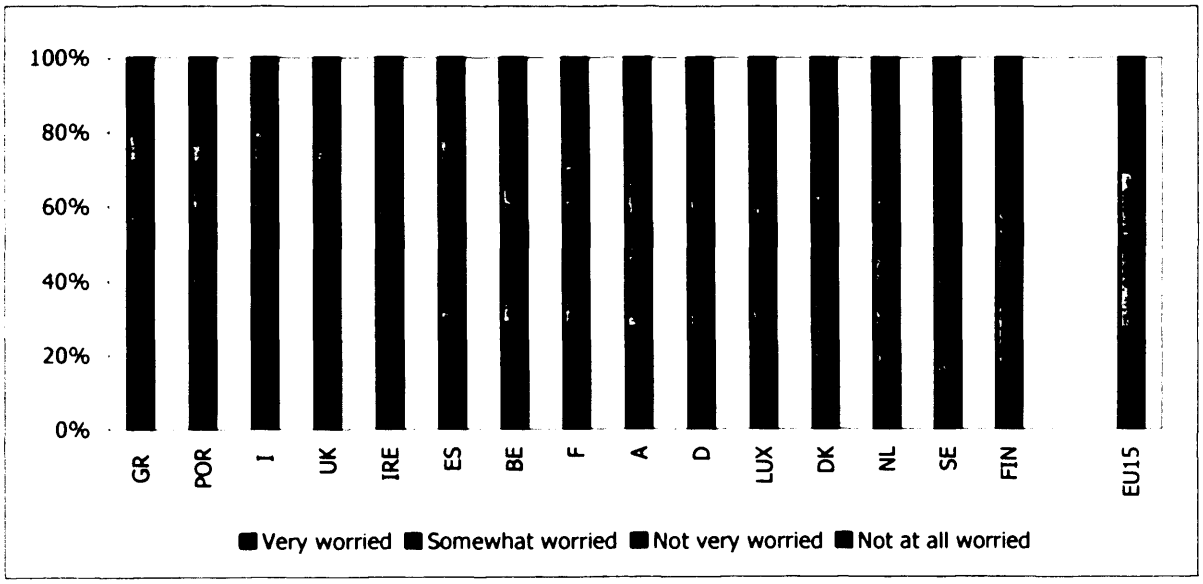
Questions have been raised about the nature and scale of change required to achieve sustainable mobility. It is essential to obtain support both for the principles and for the practice of sustainable mobility (Banister and Steen 2002). This will require a different transport policy and a strong political will to implement it.

4.1.6 Public opinion about transport and the acceptability of sustainable transport policies

With increasing shifts in policy rhetoric during the 1990s on issues such as sustainable mobility, there have been increasing concerns about urban problems in many countries. The implementation of 'sustainable' policies is dependent on two factors: the political and administrative will to implement and public acceptance of measures they perceive to improve their lifestyle and environment. This section will look at public opinion data on urban transport from across Europe. These results, even though not directly related to the *Acquis* requirements for Malta, will provide support for the policy measures suggested in this study (Chapter 6).

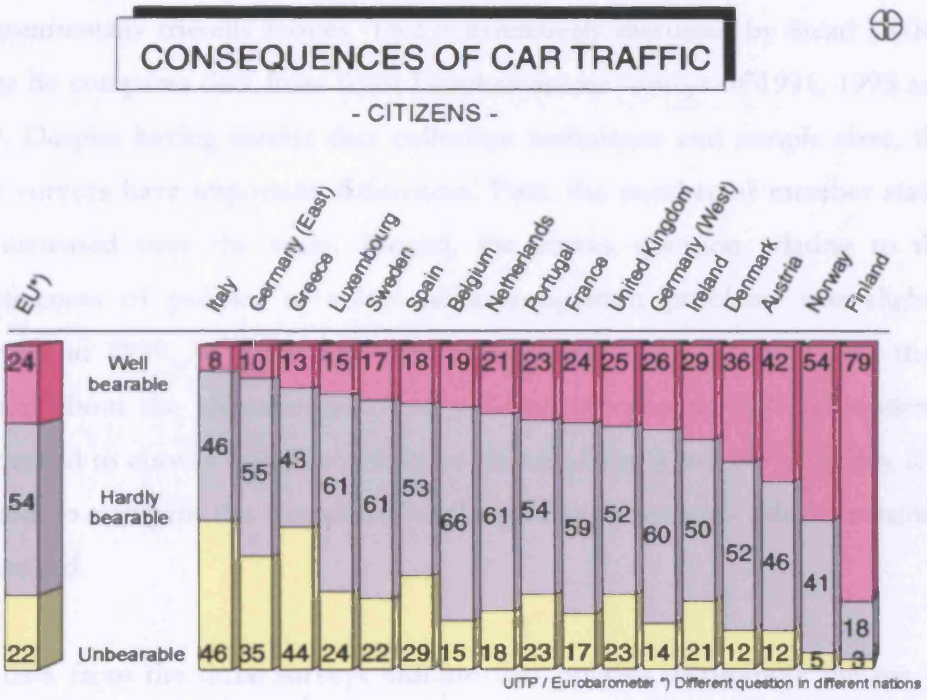
According to research carried out for the European Commission in 1999, more than two thirds of all Europeans (68 per cent) are worried about urban transport problems such as traffic, noise, and pollution, and more than a quarter (27 per cent) are very worried about these urban problems. According to the same research, many survey respondents feel that these urban problems are worse than they were in the recent past (1999 compared to 1994). The research shows that attitudes about these problems vary across different European Member States. Residents of Greece, Italy and Portugal, for example, are most concerned about these problems: more than three-quarters of all respondents in these countries have some worries about urban problems and more than one third are very worried about these problems (Figure 4.3).

Figure 4.3. Public concern about urban problems amongst European citizens in 1999. Source: Commission of the European Union, 1999 quoted from Stead, 2004.



If we look at attitudes towards traffic, then there are similar patterns in that one out of every four people in the European Union (24 per cent) thinks that the consequences of car traffic are (still) bearable, more than half view them as difficult to bear now and one person out of every five people (22 per cent) feels that they are no longer bearable. However, there are considerable variations between the individual Member States with the majority of residents of countries like Italy and Greece feeling that the traffic is hardly bearable or unbearable (Figure 4.4).

Figure 4.4 Public opinion on the consequences of car traffic. Source: Brog and Erl, 2000.



This must be understood within the context that people travel about an hour a day, which leaves 23 hours of "passive mobility". As with passive smoking, people are increasingly disturbed by the behaviour of others and the consequences of traffic. Except in the vicinity of airports, railway lines and ports, these consequences can be almost exclusively attributed to car traffic. Forty-one to 43 per cent of Europeans are of the opinion that new technical advances are unlikely to solve such problems. Only three countries have a majority that pin their hopes on technological progress (Greece with 64 per cent, Eastern Germany with 57 per cent, Finland with 55 per cent) (Brog and Erl 2000).

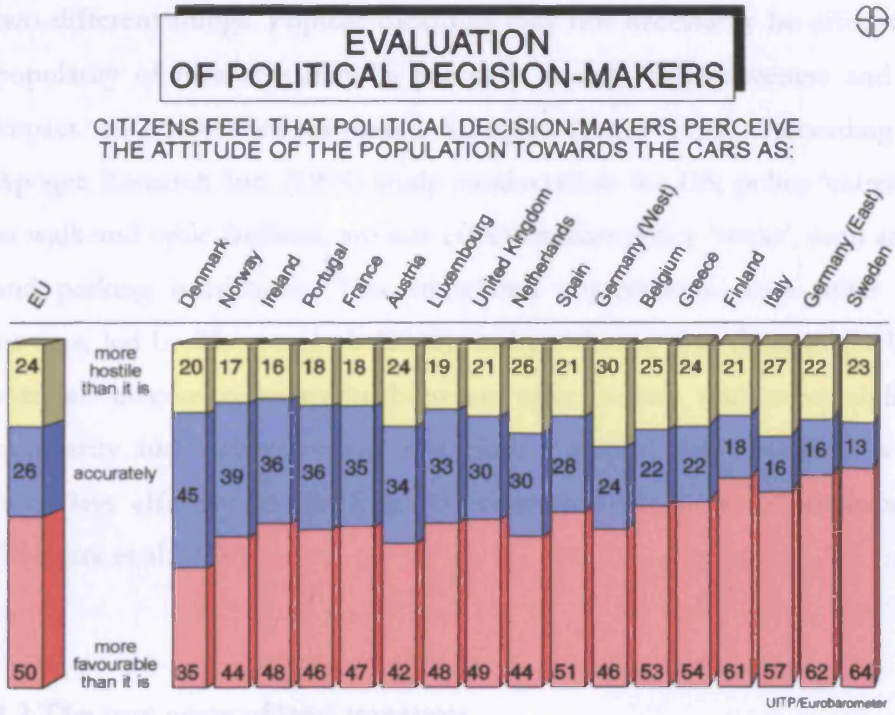
Influenced by major policy changes which took place in the 1990s across Europe and the issues of sustainable development, climate change and the 'new realism' in transport, it is clear that public opinion has changed. In light of these

concerns over urban transport problems, as well as substantial policy changes, the focus on transport by European public opinion has shifted to environmentally friendly modes. This is extensively discussed by Stead (2004), where he compares data from three Eurobarometer surveys of 1991, 1995 and 1999. Despite having similar data collection techniques and sample sizes, the three surveys have important differences. First, the number of member states has increased over the years. Second, the survey question relating to the effectiveness of policies to solve traffic congestion problems was slightly different in 1999. In 1991 and 1995 respondents were asked to give their opinion about the effectiveness of all policies, whereas in 1999 respondents were asked to choose just three effective policies from a list. Nevertheless, it is possible to compare the 'popularity' ranking of these policies, which remained unchanged.

The data from the three surveys indicate that policies to promote the use of alternative modes to the car (e.g. improving public transport or pedestrianisation) are generally believed to be the most effective. On the other hand, regulation (e.g. tolls and petrol costs) is believed to be most ineffective.

This is further supported by Brog (2003) who states that public expectations for transport planning and policy are more favourable to environmentally-friendly modes and that the importance of motorised private transport is overestimated by policy makers and the possibility of reducing it is underestimated (Figure 4.5).

Figure 4.5 Evaluation of political decision-makers. Source: Brog, 2003.



However, there are two concerns with public opinion surveys. First is the type of question one asks. According to Adams (2001), if confronted with three questions in an opinion poll, people would react very differently to the transport problem. Asked whether they wished for free and efficient mobility, all would answer yes. Asked whether they would wish to live in a world with the consequences of unrestrained mobility, all would answer no. If in the third question, however, the reverse of question two were asked, that is living in a healthier, friendlier and safer world, everyone would answer yes, especially when confronted with the consequences of question one. It seems therefore that people have yet to realise that they cannot have it all, but as long as the decision makers continue pursuing a *hyper-mobile* ideology, then the consequences are going to increase (Adams 2001). Having the right question in an opinion poll is therefore crucial.

Second, it is important to recognise that perceived and actual effectiveness are two different things. Popular measures may not necessarily be effective – the popularity of measures may lie precisely in their ineffectiveness and lack of impact on established car-based lifestyles (Jones 1991). According to the Apogee Research Inc. (1994) study conducted in the US, policy 'carrots', such as walk and cycle facilities, are less effective than policy 'sticks', such as pricing and parking restrictions. This stimulated observations from other opinion surveys, led by Thorpe et al. (2000), to hypothesise that there might be some sort of inverse relationship between effectiveness and acceptability, and popularity and ineffectiveness. Therefore a painful policy measure would be rated less effective to justify its rejection and likelihood of implementation (Rienstra et al. 1999).

4.2 The true costs of land transport

Identifying the true costs of transport in order to reduce the external impacts is a major goal of the European Union environment and transport policy. The normal response to the issue of external costs in transport is that they should be 'internalised'. The aim of internalisation, the bringing of external effects into the market process, is to have more efficient allocation of resources. As a new member state, Malta will have to participate in the debates and implementation of measures aimed at internalising transport costs.

The European Commission's objective of internalising external costs was defined in the White Paper 'Fair Payment for Infrastructure Use' (European Commission 1998). The externalities are broken down into:

- economic costs such as operating and infrastructure costs;
- environmental costs such as air and noise pollution; and
- social costs such as accidents and social exclusion.

There are at present two sets of policy tools that aim to reduce external costs (as suggested later on in Table 4.8). These are:

- 'command and control' measures that directly reduce emissions (for example, the Auto-Oil programmes), or other kinds of external impact (for example, traffic bans in urban neighbourhoods);
- pricing mechanisms (for example, taxes, charges, subsidies) that give incentives to change users' behaviour towards 'cleaner' transport. In most cases, the internalisation of external costs refers to this set of policy tools (EEA 2002b).

The reasons for seeking to internalise environmental costs are set out in various international agreements (Vancouver 1996; CEI 1997; UN 1997; ECMT 1998; UNECE/WHO 1999) and include mainly pollution prevention, health protection, safety promotion and the protection of the natural environment.

4.2.1 Measuring external costs

Since the publication of the 1998 White Paper which stated that, in principle, users of all transport modes should be charged for the external and infrastructure costs they cause, numerous studies have been published translating the principle of 'social cost' pricing or 'efficient' pricing into concrete figures for different types of vehicles. The main studies reviewed here were:

- ECMT, 1998, Efficient Transport for Europe; policies for the internalisation of external costs.
- CE, 1999, Efficient prices for transport; estimating the social costs of vehicle use.
- INFRAS/IWW, 2000, External costs of transport, accident, environmental and congestion costs of transport in Western Europe.

- UNITE, 2003, Unification of accounts and marginal costs for transport efficiency (Nash 2003).

At first sight the results of the studies differ significantly; they vary in their scope, the specific transport modes considered, the kind of impacts evaluated, and the hypotheses used (EEA 2002b). Studies differentiate between fuel, technology, car size, type of freight transport, area type and time. In addition, the studies cover different countries. A technical summary of the differences between studies was covered by a comparative report produced later in 2003 by CE (Table 4.6).

Another inconsistency between the studies was the cost items to be considered. The EU pricing policy, suggested in the 1998 White Paper, included the external and infrastructure costs, that is: safety risks, air pollution, climate change, noise and infrastructure.

The CE (2003) comparative study concludes that, with the exception of the UNITE study, the upper and lower results considered do not generally differ by more than a factor of 2, if comparable situations and vehicles are considered. A comparison between the range of external and infrastructure costs per vehicle-km in the different studies and the figures reported in the Commission's White Paper 2001 is summarised in Table 4.7.

Table 4.6 Technical summary of the four studies. Adapted from CE, 2003.

	ECMT (1998)	CE (1999)	INFRAS/IWW (2000)	UNITE (2003)
Fuel	Petrol Diesel	Petrol Diesel LPG	Petrol Diesel	Petrol Diesel
Technology	-	Before EURO EURO 1· (cars/vans) EURO 2·· (lorries) EURO 3···	Petrol Before EURO EURO 1· EURO 3··· Diesel EURO 1·	EURO 2··
Car size	-	-	-	Average
Type of freight transport	-	Van Solo lorry (<12 tonnes) Solo lorry (>12 tonnes) Articulated lorry	Light-duty vehicle (van) Heavy duty vehicle (3.5-7.5 tonnes) Heavy-duty vehicle (32-40 tonnes)	Different per case study
Area type	-	Within built-up area Outside built-up area	Air pollution: urban and interurban Noise: urban, rural and suburban Climate change: urban, rural and highway Congestion: urban, rural and motorway Accidents: no differentiation	Urban Extra-urban Motorways (different per case study
Time	-	Congestion: Peak, off-peak	Noise: sparse and dense traffic, night and day congestion: sparse and dense traffic and congestion	Peak Off-peak
Country	EU	The Netherlands	EU	Case Studies

· EURO 1 vehicles comply with emissions standards as defined in Directive 91/441/EEC
· EURO 2 vehicles comply with emissions standards as defined in Directive 94/128/EEC
· EURO 3 vehicles comply with emissions standards as defined in Directive 98/69/EEC

Table 4.7 Comparison between results of different studies and the White Paper 2001 (€c per vehicle-km). Source: CE, 2003.

Cost item	White Paper Range	Ranges in other studies
1. Accidents	0.2 - 2.6	0.3 - 5.4
2. Air pollution	2.3 - 15	2.1 - 12.6
3. Climate change	0.2 - 1.54	1.6 - 13.5
4. Noise	0.7 - 4.0	0.1 - 2.3
5. Infrastructure	2.1 - 3.3	2.3 - 10.0
6. Congestion	2.7 - 9.3	-
Range totals	**8.0 - 36.0**	**6.0 - 54.0**

The ranges reported in the White Paper are generally in agreement with those presented in the studies. The White Paper, however, omits the most extreme values for its estimates, mainly on climate change costs and heavy lorry infrastructure costs. This largely explains the White Paper upper estimate of 36 cents per vehicle-km, which is rather modest compared to the others (CE 2003).

Other external cost estimates were put forward in the early 1990s by a number of academics in the UK, including Pearce et al (1993), the Royal Commission on Environment and Pollution Report (1994), Newbery (1995) and Maddison et al (1996). These have used similar cost categories such as global warming, air pollution, noise, congestion, road damage and accidents. Others have dealt with individual studies on, for example, the value of life (de Blaeij et al 2003; Dionne and Lanoie 2004) and road accidents (Giles 2003) and the estimated external costs of car travel versus walking (Litman 2004).

4.2.2 Internalising and controlling the external costs

The aim of internalising external costs is to maximise the contribution of transport to society's welfare by providing incentives to reduce external costs. The aim is to bridge the gap that currently exists between short-run private transport costs (users' costs) and social costs. Fair and efficient pricing will make it economically more attractive to use cleaner, quieter, more fuel-efficient and safer vehicles and modes running on cleaner fuels in off-peak periods than to drive in more polluting, noisy and unsafe vehicles in peak periods (EEA 2002c). In the White Paper 'Fair Payment for Infrastructure Use', the European Commission also argues in favour of charging social costs to users.

The measures proposed by Button (1994) are mainly concerned with road transport and there are a variety of ways and levels at which internalisation

could be effected. Table 4.8 presents policy options for control of the external costs of transport.

Table 4.8 Policy options for control over the external costs of road transport. Source: Button, 1994.

	Pricing Mechanisms		Command-and-control Measures	
	Direct	**Indirect**	**Direct**	**Indirect**
Vehicle	- Emission fees	- Tradable permits - Differential vehicle taxation - Tax allowances for new vehicles	- Emissions standards	- Compulsory inspection and maintenance of emissions control systems - Mandatory use of low polluting vehicles - Compulsory scrapping of old vehicles
Fuel		- Differential fuel taxation - High fuel taxes	- Fuel consumption - Phasing out of high polluting fuels	- Fuel economy standards - Speed limits
Traffic		- Congestion charges - Parking charges - Subsidies for less polluting modes	- Physical restraint for traffic - Designated routes	- Restraints on vehicle use - Bus lanes and other priorities

The effectiveness of these instruments is obviously dependent on the external cost under consideration. Economic instruments also often provide cash flows which in turn can be used to compensate those who have to adjust their behaviour as the result of policy (Goodwin 1990; Small 1992). It is also true that some examples have proven to be successful at reducing some of the external costs. These include the use of differential taxation to reduce the use of

leaded petrol in many countries across Europe and the permit system used to phase-out lead from petrol in the USA (Hahn and Hester 1989).

The expected outcomes of policy measures aimed at internalising costs have also been analysed by Gibbons and O'Mahony (2002). In order to offset the external cost estimates from the four cities they studied (London, Dublin, Brussels and Amsterdam), very large percentage increases in the price of car use in the peak periods would be required. Figures varied from 91 per cent in Dublin to 233 per cent in Amsterdam. However, the changes in predicted transport volumes as a result of the price increases were considerable. All peak period car traffic levels declined by 19 per cent in Dublin and 33 per cent in London.

4.2.3 Internalising costs – the European Union's approach and policy commitment

Despite the realisation both in the 1998 and 2001 White Papers that escalating congestion and pollution threaten the 'sustainability' of transport, very little has been achieved within the European Union in the form of measures to control growth in the transport sector.

The White Paper on Fair Payment for Infrastructure Use published in 1998 had the objective of showing the need for gradual harmonisation at Community level of the charging principles applied to the various commercial modes of transport. The White Paper outlines the transport problems that result from current charging systems and which result in:

- distortions of competition between Member States;
- distortions of competition between different modes of transport and within modes;
- the failure to consider environmental and social aspects of transport; and
- difficulties in funding infrastructure investments.

Transport charging systems differ greatly between Member States, with different annual taxes on lorries, limited use of tolls on motorways and a variety of VAT charges and energy taxes on transport modes. The aims and concepts suggested in the White Paper are presented in Table 4.9.

Table 4.9 Aims and concepts of the 1998 White Paper on Fair Payment for Infrastructure Use. Source: European Commission, 1998.

Aims	**Concepts**
- to improve the efficiency of provision and use of European transport infrastructure; - to promote fair competition; - to safeguard the single market; - to enhance the sustainability of the transport system.	the same fundamental principles should apply to all commercial modes of transport, namely; - infrastructure charges should be based on the "user pays" principle; - charges should be directly related to the costs that users impose on the infrastructure and on others; - changes should promote the efficient provision of infrastructure.

The only approach identified as suitable for all these criteria was external cost charging, that is charging users for both the internal and external costs, that they impose at point of use. Therefore transport undertakings would have an incentive to use less polluting vehicles, choose routes with lower levels of road damage, congestion, accident risk and environmental impact, or switch transport mode.

The only direct result of the 1998 White Paper was Directive 1999/62/EEC which sets common rules on annual taxes, distance-related tolls and time-based user charges for heavy goods vehicles (above 12 tonnes) for the use of infrastructure. This legislation, generally called the 'Eurovignette' Directive aims:

- to further develop both the functioning of the internal market and standardise the conditions of competition in the transport sector by reducing the differences in the levels and in the systems of road taxes and charges applicable within Member States;
- to take better account of the principles of fair and efficient pricing in transport by providing for greater differentiation of taxes and charges in line with costs associated with road use (including externalities); and
- to further move towards the principle of territory-based charging for road use.

The directive requires a compulsory minimum rate for annual vehicle tax on heavy goods vehicles in accordance with the number and the configuration of axles and maximum permissible gross laden weight. It also lays down rules to be followed by Member States should they wish to introduce tolls and/or user charges.

The adoption of the first part of Directive 1999/62/EEC by the various Member States is still in its early stages and it is too soon to assess its impacts. Countries like Switzerland (which is not an EU member state) have just introduced an electronic toll system on their network for heavy goods vehicles. Unfortunately, however, there are two main concerns.

First, the European Commission is content to apply road user charges only to heavy goods vehicles, with nothing being done to curtail the use of the private motor vehicle. Whilst examples of road pricing such as those in London, Rome and Stockholm are applauded by the Commission, it does not envisage in the near future imposing on Member States the introduction of road user charges on private motorists. It is therefore left to individual states to seek to internalise the costs of transport for all users, as suggested in the European Transport Policy White Paper 2010.

Second, the 'Eurovignette' directive has been too closely associated with the funding of road infrastructure projects. The adoption of this directive was contested by various Member States, particularly peripheral countries, which claimed this regulation is unfair on their internal markets since no transit traffic used their roads. Central European countries on the other hand see their roads being constantly used by foreign heavy goods traffic, crossing Europe and damaging their roads and polluting their environments. These were therefore applying a lot of pressure for this directive to be adopted. This directive and its further amendments were seen as the future source of revenue for road infrastructure projects and/or maintenance. The problem that this directive creates for Malta, a country without transit traffic, is that charges would have to be imposed on local heavy goods vehicles, therefore increasing the cost of transport and the prices of goods.

The internalisation debate for many countries, including Malta, is a growing concern, as funds for transport become less and the pressures for more infrastructure and the impact of transport on the environment increase. As part of the European Union, Malta has to participate actively in the debates on road pricing, and it will be encouraged to implement measures to control the external costs of transport. The differences between the current and the true costs of transport, and the control measures already implemented by the Maltese Government, have been identified in Section 3.2 of this study. In Chapter 6 a proposal will be made to internalise costs on the lines suggested in this section, and a revision of the Valletta charging scheme will be proposed as part of the policy objective to reduce car use.

4.3 Buses and their role in promoting sustainable mobility

There are various contrasting arguments about the role public transport, in particular buses, has to play in the adoption of sustainable transport policies. Pickup (1992) argues that buses must be at the core of transport policy if

sustainability means greater concern for social and environmental issues. Mees (2000) states that the provision of more public transport is not a sufficient response to environmental, equity or congestion problems, because improved public transport may not, by itself, reduce traffic levels because of suppressed demand for more mobility.

It is, however, acknowledged that a bus that can carry an average of 50 people (in the case of Malta), takes up little more road space than two cars, and emits less pollution per passenger kilometre. Apart from these environmental benefits, a bus has a social role in that it provides possibly the only link to education, health, employment and leisure for the lower income groups of society; an estimated 25 per cent or so of households are without regular access to a car in the UK (Preston 2003). Members of such households make four times as many bus and coach journeys as members of car owning households. A report, commissioned by the UK Prime Minister, from the Government's Social Exclusion Unit, with the brief of investigating the relationship between transport and social exclusion found that:

- two out of five job seekers say lack of transport is a barrier to getting a job;
- six per cent of 16-24 year olds turn down training or further education because of problems with transport; and
- seven per cent of people without access to a car say that they have missed, turned down or chosen not to seek medical help over the last 12 months because of transport problems (House of Commons 2002)

Although the above cannot be directly transposed to Malta because of lack of comparable data, there are similarities in the disadvantage suffered by those dependent on public transport. This social role, in addition to the environmental benefits outlined above, should make buses a major player in achieving sustainable transport objectives. The public perception in favour of

public transport (as suggested in sections 4.1.6 and 6.2) is also in support of this argument.

The following section looks at the literature on bus services across Europe, with a focus on the deregulation/privatisation of bus services in the UK. Performance, in terms of patronage, is also assessed to evaluate whether public transport has made an actual contribution to sustainable mobility. The literature on this subject is very extensive and reference to key documents will summarise the international experience of different operators. This overview will provide the basis of a proposal for a new operational and administrative structure for public transport services in Malta (Section 6.2.2).

4.3.1 An overview of the administrative structures for bus operations in Europe

All across Europe, concerns about increasing traffic congestion and the unsustainability of many current transport policies have led to increasing interest in the role of bus services. Central to this interest are concerns about the regulatory and financial frameworks within which bus services are provided in the different EU member states. Both Pucher (1995) and Yago (1984) in comparing European and US systems regard the difference in frameworks as critical to their success or failure.

Everywhere within the EU there is an interest in the role of regulatory and financial frameworks in driving down operating costs and subsidies, and in finding an appropriate blend between the exercise of entrepreneurial skills and regulation in promoting high quality, reliable and affordable bus services which meet the needs of the public in terms of both the provision of accessibility and the protection of the environment. Table 4.10 describes transport regulation across Europe from three aspects, mainly service planning and regulation, financial support and competition.

Mees (2000), however, discusses other important elements of public transport operation. He uses the examples of Toronto and Zurich as successful models in comparison with Melbourne, where uncoordinated, market-driven public transport systems have collectively proven less able to respond to the changing travel needs of the city. In the development of public transport services Melbourne also had no publicly-stated rationale for its network of bus routes, which reflects a process of *ad hoc* evolution over the decades. This, in principle is very similar to the development of bus routes in Malta (as discussed in Chapter 3).

In all the successful urban public transport systems there is central planning by a public agency which integrates flexible travel options into one network. According to Mees (2000) this requires the following conditions:

- an integrated route structure which maximises opportunities for interchange and reduces duplication and overlap;
- fast, frequent, reliable service on the main routes;
- high service levels on all routes throughout the day and evening;
- convenient, attractive and safe interchange facilities;
- matching hours of operation on the different routes serving interchanges and either co-ordinated timetables or very frequent services;
- through ticketing;
- easy-to-obtain, well-presented route and timetable information covering the whole network.

Table 4.10 Overview of bus regulation across Europe. Adapted from Colin Buchanan and Partners, 1998.

Service Planning and Regulation	The general pattern is to allow municipal or regional authorities to authorise services which are wholly within their areas. This pattern depends on whether the operator is public or private. The exceptions are the UK and Ireland. Since deregulation in the UK, service planning has been the responsibility of operators. Local authorities plan only the social services which require subsidy. (Table 1 Appendix IV)
Financial Support	In the majority of countries, financial support is negotiated as a global amount at the beginning of each financial year. This acts as a fixed contract between subsidy provider and operator. This model, however, is not applied to Germany, UK and Ireland. (Figure 1 Appendix IV)
Competition	At present, the only instance of local on-the-road competition which occurs in Europe, is in the UK, brought about by the deregulation of services, which took place in 1986. Illegal competition has broken out in some parts of other countries, particularly Ireland, Portugal and Italy. Many other countries are introducing competition by means of competitive tendering. The principal motivations for introducing tendering are: - rising cost of public transport subsidies; - European Competition Directives; - Desire to bring about more innovation in the provision of services. Only UK (London), Denmark, Sweden and France have systems of competitive tendering. Most contracts are on a gross cost basis whereby the operator is guaranteed the agreed operating costs of the contract and the authority retains the revenue. Six out of the total 15 members have no plans to introduce competitive tendering. These are Luxembourg, Greece, Ireland, Austria, Italy and Portugal (see Table 2 in Appendix IV). Changes in the Commission's viewpoint on competitive tendering of public transport services, however, might oblige the remaining countries to consider this model.

The experience of Zurich suggests that central planning need not exclude private operation of individual services, as long as this occurs within an overall framework of publicly accountable planning. Mees (2000) calls for competitive tendering as a good way of keeping costs down.

Judgements about European bus services vary depending on the comparisons being made, however. Compared with most other parts of the world, they are considered successful (see for example Mees 2000 with the 'Zurich model'; Gomez-Ibanez and Meyer 1993). But when trends are considered, judgements are less optimistic. Table 4.11 reveals an increase in bus use since 1970 in 12 out of the 15 EU countries, but over the same period, because of greater increases in travel by car, the average bus modal share decreased from 12.7 per cent to 8.6 per cent (Eurostat 2003).

The performance of bus services across Europe as illustrated in Table 4.11 shows the annual passenger kilometres in the EU 15 and the per capita passenger kilometres between 1970-2000. Modal share, in 2001, was still dominated by the car. Over this same period of time buses increased the total passenger kilometres by 9 per cent, whilst the increase for passenger cars was 17 per cent (Eurostat 2003).

Table 4.11 Bus and coach use in Europe (in 1000 mio passenger kilometres per annum and pkm per capita in blue). Source: Eurostat, 2003

'ear	B	DK	D	EL	E	F	IRL	I	L	NL	A	P	FIN	S	UK
970	9.3	4.6	67.7	9.4	20.9	25.2	3.3	32.0	0.8	9.5	9.1	4.4	7.5	5.5	60.2
	958	939	871	1,068	618	496	1,100	595	2,667	731	1,213	506	1,630	688	1,087
980	9.1	7.3	90.0	15.6	28.1	38.0	4.5	57.8	0.8	11.2	9.8	7.6	8.5	7.3	52.2
	929	1,431	1,149	1,625	751	705	1,323	1,025	2,000	794	1,307	776	1,771	880	927
990	10.9	9.3	73.1	17.7	33.4	41.3	3.9	84.0	0.9	11.1	8.7	10.3	8.5	9.7	46.2
	1,090	1,824	921	1,735	859	728	1,114	1,481	2,250	740	1,130	1,040	1,700	1,128	802
000	12.4	9.1	69.0	21.7	50.3	45.3	6.1	94.0	0.9	12.6	13.1	11.8	7.7	11.1	45.0
	1,024	1,717	839	2,067	1,021	769	1,605	1,626	2,250	792	1,617	1,157	1,481	1,247	754

According to Table 4.11 the UK experienced the greatest decrease in passenger kilometre by bus per capita (1,087 in 1970 to 754 kilometres in 2000). It is important to state here that in London, where public transport is still controlled by the Greater London Authority, patronage has increased since 1994 while it has continued to decrease in the rest of the country. The UK (excluding London) is also the only case of on-the-road competition that exists today in Europe.

4.3.2 The experience of deregulation and privatisation in the UK

Since the Transport Act of 1985, bus policy in the UK (except London) has been committed to privatization and deregulation. The Conservative Party, led by Mrs Thatcher, was concerned to remove barriers to competition – to foster the free market in the belief it would encourage efficiency and reduce the involvement of the state to a minimum. According to Glaister et al (1998), the Conservative government subsequently discovered additional motives for privatization. The sale of British Telecom provided substantial sums to the Exchequer. This income helped deal with the pressing problem of funding the cost of rapidly increasing social security claims without increasing taxation. Transport privatization in the years 1987-8 yielded about £4 billion (Banister 1994).

In the case of London buses, following lengthy discussions and the fear that complete deregulation would cause public chaos in central London, it was decided that, whilst deregulation should remain the long-term policy objective, London Transport Buses would retain a powerful role as regulator. Today London buses work on a route tendering system, a system described as competition *for* the route rather than competition *on* the route (Glaister et al. 1998).

The introduction of free markets and competition were not the only incentives leading to privatization and deregulation. The reduction of overall public expenditure also played a very important role. The UK government at the time put concerns about the impact on passengers in second place. Unfortunately, such is now the situation in Malta. The primary goal for the government is to reduce subsidy by increasing fares and reducing services.

When Labour came to power in the UK in 1997, there was a two-track bus system. Outside London there was a deregulated system in which there was little scope for government intervention, whilst in London there was a regulated system with substantial scope for government intervention, albeit scope that was subsequently devolved to the new Greater London Authority. With these systems in place, one can actually compare the merits of deregulation and competitive tendering. Preston (2003) carried out a good comparative analysis. Some indicators showing the performance of the bus services across London and the rest of the country are described in Table 4.12.

Table 4.12. Performance indicators for local bus services in the UK and London. Source: adapted from Preston, 2003.

	1980		1990		2000	
	LDN	**UK**	**LDN**	**UK**	**LDN**	**UK**
Fare indices by area (constant prices)	77.4	82.5	82.7	90.0	105.0	110.5
Vehicle kilometres (million)	279	1,984	304	2,150	365	2,234
Passenger journeys (million)	1,181	5,043	1,188	3,866	1,307	2,972
Operating costs*	296	159	240	106	158	81
Public transport support and concessionary fare reimbursement	380	1,119	239	806	124	613
Fuel duty rebate (million £, 1990/00 prices)**	23	165	26	185	47	286

* including depreciation, per vehicle kilometre, adjusted for inflation (1999/00 prices). Figures are net of fuel duty rebate.

** estimate based on vehicle kilometres.

Despite the similar changes in the bus fares index across the UK and the increase in the number of services (vehicle km), the number of passenger journeys increased for London but considerably reduced for the rest of the country. This is also confirmed by the House of Commons (2002) Seventeenth Report entitled *The Bus Industry*. Operating costs have decreased throughout the UK, although in London they are almost double those of the rest of the country (Preston 2003).

There are also substantial differences in subsidy provision (refer to Table 4.12). The public transport support and concessionary fare reimbursement combined have declined each year by 5.4 per cent in London and by 3 per cent in the rest of the country. In the case of fuel rebates, as an additional subsidy, bus services outside London received an equivalent of 40 per cent of gross operating costs, whilst in London the rebate is only 27 per cent of gross operating costs. Therefore the tendering system in London receives less financial support than the deregulated regime beyond (Preston 2003).

4.3.3 Public transport in Denmark, Germany and the Netherlands

Table 4.13 summarises the administrative structures of public transport in the three European countries of Denmark, Germany and the Netherlands. The objective of this section is to understand bus operations in other countries and to support the discussions in section 3.3 and 6.2.2 on bus operations in Malta.

The utilization of competitive tendering has been successfully adopted in Denmark, despite the fact that it is gross cost tendering which guarantees an income to the operator and limits the incentive to perform. In Germany and the Netherlands there are stronger ties with the public administration of bus services, the first dominated by the Länder and the latter run by municipal companies in cities.

Denmark	Germany	Netherlands
	6300	20
panies 0.4%	Private 48% Transport holding companies 4% Municipal companies 48%	Private 2% National holding companies 80% Municipal companies 18%
tendering authority	Hiring of staff Purchase of vehicles Provision of depots Vehicle maintenance Revenue collection and distribution	Hiring of staff Purchase of vehicles Provision of depots Vehicle maintenance Revenue collection and distribution
nent and tendering authorities.	Carried out by two private companies under contract by the Ministry for Transport.	Vehicle controls by government. No service quality monitoring.
ices, stops and inter-modal links	Locally integrated tariff structure and revenue pooling through the Associations (Verkehrsverbund).	National fares system based on zones. Dense network of services.
ering by Regional Traffic by government agency.	Responsibility of the Länder but more involvement from the local transport planning authorities (Aufgabenträger).	Cities with municipal companies authorise own services, while Ministry for Transport deals with all others.
	35% on average (higher in urban areas)	66% average across whole country

res for bus services in Denmark, Germany and the Netherlands. Source: Colin Buchanan and Partners, 1998.

A detailed look at the performance of bus and coach use for the three countries shows mixed performances in the number of passenger kilometres by bus, particularly when compared to the rising use of the private car (Table 4.14). Denmark achieved an increase in passenger kilometres by bus until 1997 and then saw a decline to below 1990 levels. At the same time car use increased, with some signs of decline in 2001. Passenger kilometres by bus in Germany, on the other hand, remained stable throughout the second half of the 1990s first against a trend of increasing car use, and continued against a decline since 1999, following which passenger kilometres reached their peak. The Netherlands experienced a gradual increase in passenger kilometres by bus. This was coupled with a steady increase in passenger kilometres for private car use. All three countries have demonstrated a lower modal share for buses in 2001 compared with 1990.

Table 4.14 Detailed bus and coach use and passenger cars in Denmark, Germany and the Netherlands (in 1000 million) passenger kilometres. Source: Eurostat, 2003.

Year	Denmark		Germany		Netherlands	
	Bus	Car	Bus	Car	Bus	Car
1970	4.6	*33.3*	67.7	*394.6*	9.5	*67.1*
1980	7.3	*38.1*	90.0	*513.7*	11.2	*108.1*
1990	9.3	*47.8*	73.1	*683.1*	11.1	*139.3*
1991	9.2	*49.2*	77.7	*700.0*	11.2	*136.7*
1995	10.6	*54.3*	68.5	*730.0*	11.8	*143.0*
1996	11.4	*55.8*	68.3	*730.8*	12.0	*143.0*
1997	11.2	*57.1*	68.0	*735.4*	12.0	*146.2*
1998	9.1	*58.5*	68.2	*738.8*	12.6	*146.4*
1999	9.1	*59.3*	68.0	*745.2*	12.6	*150.6*
2000	9.1	*59.1*	69.0	*714.5*	12.6	*151.5*
2001	9.0	*58.6*	68.7	*705.5*	12.7	*152.0*

The Government of Denmark has been keen to introduce competitive tendering and a number of experiments have taken place since 1994/5. By 1998, eight out of 13 Regional Districts had applied gross-cost tendering of services (Colin Buchanan and Partners 1998).

Competition in Denmark, in the form of gross competitive tendering, has led to improvements in the fleet and reductions of up to 20 per cent in the cost to the public purse. The only weakness envisaged is that, once a contract is awarded, there is neither the opportunity nor any incentive for operators to develop their patronage and improve their financial position. The planning of services in Denmark has been formally separated from the operation of buses in most areas, whereas publicly owned services are planned and operated by the same department of Government. However, some discussion between planners and operators takes place when networks and fares are set.

In Germany, on the other hand, the administration is all controlled by the State (Länder), with some degree of involvement by the local authorities (since 1996). The Länder can ask the local authorities to provide a local transport plan following specific guidelines. The effect is to share the responsibility between regional and local government, where the regional government has the responsibility for rail-borne public transport and the local authorities have the responsibility for bus, metro, light rail and trolleybus traffic.

By law the 16 Länder have the local service licences. The licence specifies the route, terminal points, stopping places, timetable and fares. In principle these licences are open to any operator, but since they are awarded on eight-year contracts it is rare for a whole new service to be authorised or for a new operator to take over an existing service. In addition to this, financial support is provided for concessionary fares. However, unlike in the UK, only government-owned operators are eligible for subsidies (they are not available to private sector operators).

In the Netherlands the outcome of experimental tendering brought in American operators (Vancom), who succeeded in winning a small 30-bus network in the Maastricht area (Colin Buchanan and partners 1998). Also, Groningen operations have been partially privatised, with Vancom taking over 15 per cent of the shares. They were also given the opportunity to buy the

remaining shares if they succeed in improving financial performance. Vancom Nederland acquired full ownership of the Groningen Transport Company as of 1st January 1998, the first fully privatised municipal transport company in the Netherlands (Van het Kaar 1997).

The move to privatisation in the Netherlands has seen a gradual improvement in bus use. There is, however, another important element contributing to the increasing patronage in the Netherlands. The cultural attitude in favour of public transport and bicycles is much higher than in other countries, particularly Mediterranean countries, where the high social status associated with the car has led to dependence on this mode.

The relative success of bus companies across Europe in increasing patronage has to be understood in the context of greater increases in the use of cars (Eurostat 2003). One therefore cannot conclude that buses have provided a 'sustainable' option by replacing less environmentally-friendly modes of transport. This increase in motorised mobility does not augur well for sustainability. As long as transport planners and policy makers perpetuate the pursuit of greater mobility, the impacts and costs will continue to increase. The relevance of this section to this study, however, has been to provide examples of good practice where success has been achieved and eventually to apply it to the public transport services in Malta. This is one of the objectives of Chapter 6.

4.4 Conclusions

This chapter has concluded the first part of this study. The objectives of this review were to identify and critically assess the problems with the term 'sustainable' mobility, to estimate the true costs of transport and highlight the potential role of public transport as an alternative to current increases in private

mobility trends. The review also looked at international transport policy (including the EU) and public opinion. It is clear from this chapter that there is the need for a clearer definition of what sustainability means, in terms of growing transport needs versus economic development. It also suggests that increasing mobility is the problem. However conflicts exist between what should be done and what is really happening. The background on Malta presented in the second and third chapters, coupled with the literature review in this chapter, provide the foundations for the second part of this study.

5.0 Approaches to the study

There are five objectives in this study, two of which required specific tools and methodologies to achieve. The first, the analysis of the information on the origins and current state of Malta's transport problems, was assisted by a Geographic Information System. This was used to present location-based information; namely traffic densities, car ownership patterns and public transport performance. The other (in fact the fourth objective identified earlier), the identification of barriers to a more 'sustainable' policy framework was achieved using interpretative approaches to policy analysis, involving a number of methodologies generally associated with qualitative research. The *sociological institutional* approach was adopted in order to conduct a historical analysis of transport policy through two key organising concepts. First, policy discourse was analysed through reviews of past policy documents and electoral campaign manifestos. These documents represented the source of information on national transport policy since Independence in 1964. Second, policy networks and arenas were outlined through an understanding of the institutional arrangements for transport policy in Malta and their role in policy discussion (Healey 1997; Vigar et al. 2000).

The legal, political and administrative literature reviewed for the analysis of policy discourse helped in identifying the policies adopted by the Maltese government with respect to land transport. Another approach used in this study for gathering information on policy in the last five to ten years was through structured interviews with major stakeholders within the formal institutions. The main aim was to establish the policy positions of organizations and key stakeholders involved in transport planning at a national level and identify the problems of implementing a new strategy.

This chapter explains the various research methods adopted for this study. First, the availability and use of secondary data required to establish the current state of transport and build a land transport Geographic Information System for Malta is discussed. Second, the sociological institutionalist approach to transport policy analysis is reviewed in terms of its suitability for appraisal of the policy documents used for this study and the conduct of the stakeholder interviews. The visual approach used during interviews, which is quite innovative in the field of policy analysis, will be assessed at the end of this chapter. Finally, problems encountered in the research and the specific benefits of the chosen approaches will be considered.

5.1 Availability, access and use of secondary data

Even though there is a lack of data on land transport in Malta via the publicly available channels, namely the National Statistics Office, I became aware that much useful data exist in a very fragmented manner. They do not exist in the form of a comprehensive transport publication, nor are they held in one place. This made the search for data more extensive and covered a large array of departments, authorities and organisations. This fragmentation frequently makes the available data inconsistent and it was widely acknowledged among the stakeholders in the interviews that key data were not available. This study has for the first time collated the relevant available data in one document. However, this does not mean that all the relevant information has been collected. There is still a large amount of data, mostly held by the private sector in the transport industry, which is not available to public entities or individuals. Collection of this data requires both time and resources and possible legislation to compel disclosure.

This section outlines the main sources of data and the methodologies for the major transport surveys carried out on the island. Reference is also made to the

assumptions used in this study, necessitated by the lack of particular data. These assumptions were made to ensure continuity in the proposals and conclusions of this study. It is hoped that future research and efforts by the competent authorities will lead to the collection of the much needed missing information.

5.1.1 Sources and surveys

The various entities that collect information in Malta are mostly government departments and authorities. The most important sources are the authorities responsible for land use planning and environment, tourism and land transport. The Malta Transport Authority was set up in part fulfilment of the requirements of the European Union *Acquis*. The accession process has mostly involved changes to the legislature, but it has also involved structural changes in administration and movement of former government departments to different ministries and authorities. These shifts have sometimes been blamed for the very slow progress in policy making and the collection of information.

The European Statistical Office (EUROSTAT) also started to request that a number of data collection exercises be carried out by the National Statistics Office to comply with the accession requirements. In addition to this, Malta's membership of the European Conference of Ministers of Transport requires that certain statistics are collected and delivered in time to meet publication deadlines (for example, ECMT 2000).

This section provides an overview of the main sources of data and the survey methodologies for some of the secondary data presented in this study. Table 5.1 summarises the use of such data for easier reference.

Table 5.1 Use of secondary data sources in this study.

Source	Surveys	Application
National Statistics Office	- Census of Population and Housing - Environment Statistics - Road Accident Statistics* - Transport Statistics**	- Population growth of Malta and household characteristic data (Chapter 2) - Environmental and social impact (Chapter 2) - Environmental and social impact (Chapter 2) - Past and current transport system (Chapters 2 & 3)
Malta Transport Authority	- Licensing and Testing data and Vehicle Statistics Data** - Public Transport Survey data - Transport Infrastructure Needs Assessment	- Current levels of motorization and transport revenues - Public transport infrastructure (Chapter 3) - Road Infrastructure (Chapter 3)
University of Malta	- State of the Environment Report - Pollution data - Undergraduate and Post-graduate dissertations	- Environmental and social impact (Chapter 2) - Environment and social impact (Chapter 2) - Land transport (Chapters 2 & 3)
Malta Environment and Planning Authority	- Structure Plan - Local Plans - Transport Topic Paper - Attitude Surveys - Household Travel Surveys	- Land transport and land use planning policy (Chapters 2 & 3) - Land transport and land use planning policy (Chapters 2 & 3) - Land transport and policy (Chapter 3 & 6) - Public attitudes on land transport (Chapter 6) - Land transport overview and public transport analysis (Chapters 3 & 6)
MediaLink	- Development Plans - Policy Reports - Newspapers	- Policy discourse analysis (Chapter 7) - Policy discourse analysis (Chapter 7) - Policy discourse analysis (Chapter 7)
Malta Tourism Authority	- Tourist use of buses	- Land transport overview (Chapter 3)
Police	- Road Accident Data*	- Environmental and social impact (Chapter2)

* The Licensing and Testing Directorate at the Malta Transport Authority provide data published by the National Statistics Office on vehicle stock.
** The Police provide data published by the National Statistics Office on road accidents.

Published data for land transport are usually related to vehicle stocks and road accidents. Some inconsistencies were evident because of the different methodologies used in data classification. For example, until 1998, there was no distinction between registered vehicles (vehicles registered upon entering the island) and licensed vehicles (vehicles licensed to drive on the road) in the published data. Identifying this difference required a specific request for data to the relevant authorities. However, since 2000, there has been a standard classification of the vehicle stock on the island supplied by the Licensing and Testing Directorate of the Malta Transport Authority and published by the National Statistics Office. Table 5.2 provides the 2002 dataset. Given this classification, proper estimation of the number of vehicles using the road network is possible. It is imperative for policy makers to know the number of affected users should a policy be implemented. This would definitely be the case for the provision of more infrastructure, or alternatively, for the identification of the exact number of people influenced by the introduction of restrictive measures on car use.

Since these data are now standardised, trends such as private car ownership growth, commercial vehicle fleet growth and pollution from the average engine capacity for passenger cars can be estimated with more accuracy.

Apart from the vehicle data, the Licensing and Testing Directorate also collects data on the revenue generated from road transport (data used in Table 3.3). This includes:

- revenue generated from registration tax, number plates and road licences,
- revenue generated from the Vehicle Roadworthiness Test (VRT),
- revenue generated from driving tests and licences,
- other revenue (trailer permits, *affidavits*, government work, road usage tax, other permits), and
- revenue generated from vehicle annual licensing and V-licence.

Table 5.2 Vehicle classification with total number of registered and licensed vehicles, 2002. Source: Licensing and Testing Directorate, 2003.

Type of Vehicle	Total Registered Vehicles	Total Licensed Vehicles
Agricultural Tractors	1,321	1,091
Coaches and Private Buses	160	157
Commercial Vehicles	51,965	43,802
Chauffeur Driven Vehicles	1,288	1,167
Minibuses	404	397
Motorcycles	17,461	12,719
Public Service Buses (Malta and Gozo)	579	573
Self-drive Passenger Cars	6,529	5,920
Self-drive Motorcycles	369	268
Taxis	251	247
Passenger Cars with engine capacity:		
up to 1300cc	114,503	99,365
from 1310cc to 1449cc	20,962	20,196
from 1450cc to 1500cc	20,279	17,774
from 1501cc to 1800cc	28,462	25,978
from 1801cc to 2000cc	25,830	24,228
from 2001cc and over	7,314	6,243
TOTAL VEHICLES	**297,677**	**260,125**

In 2002 the total revenue generated from the Licensing and Testing Directorate alone amounted to approximately €83.1 million. In this small island road transport is hardly ever considered important in terms of policy making however, it is one of the largest generators of government funds. Only a part of these funds is directed towards improvements in the transport systems; through bus subsidy and road network budgets. Despite publication of these figures in government accounts,

road budgets have been the source of political debate. Before the April 2003 elections, the Transport Minister claimed that the Nationalist Government had spent €71,264,992 on road maintenance and reconstruction in the period 1999-2003. The Shadow Minister for Transport and Communications publicly contested this figure in the local newspapers, stating that only €54,664,612 were actually spent according to his accounts (Anon 2002).

The National Statistics Office provides the statistical backbone to all government departments, even though it is widely acknowledged that it is dependent on other entities to collect most of the data it publishes. The National Statistics Office has the role of assisting in the methodology of data collection by acting as a regulator and then publishing the data periodically.

One of its major publications is the *Census of Population and Housing*, which was last held in 1995 (at a ten-year interval). This is the most comprehensive form of socio-economic data in Malta. It provides economic, mobility and employment statistics by locality. This information was used in describing the present socio-economic situation of the islands and the input for the land transport Geographic Information System. In 2001 the National Statistics Office also published the first *Transport Statistics* booklet with rudimentary statistics on all forms of transport (land, sea and air). Environmental statistics have also become very important, with the first publication entitled *Malta at a Glance: A look at Environmental Indicators*, including emissions data from various sources, including transport (National Statistics Office 1999) and a second more comprehensive publication entitled *Environment Statistics* (National Statistics Office 2002a). In these were the first ever-published emissions data for the islands taken from a study conducted at the University of Malta by the Department of Physics, which is still today actively involved in collecting air samples and monitoring pollution levels around the islands.

The Malta Environment and Planning Authority was another major source of information which directly influenced the availability of transport data for this study. The *Structure Plan for the Maltese Islands* (1992) provided a statement of the existing land transport policy; drawn up by a team of consultants from Colin Buchanan and Partners, UK and approved in 1992 by Parliament to provide strategic guidance on land use planning in the Maltese Islands. It contains 320 policies on settlement, the built environment, housing, social and community facilities, commerce and industry, agriculture, minerals, tourism and recreation, transport, urban and rural conservation and public utilities (Planning Services Division 1992). In addition, two Local Plans relating to Marsaxlokk and Grand Harbour were issued by the same authority and subsequently approved by Parliament. These three documents provide the complete land use and transport policy framework for Malta.

The surveys conducted between 1989 and 1990 for the production of the Structure Plan contain valuable information on travel behaviour, car ownership and mobility in general at that time. These were eventually published in the technical reports and the Reports of Survey (Planning Services Division 1990). It is thanks to these reports that an estimate of the transport trends over the past decade is possible.

According to the Development Planning Act of 1992, and its amendment in 2001, the Malta Environment and Planning Authority is legally obliged to review the Structure Plan to address issues that are relevant or that will become relevant in the islands over the next 20 years: *The authority shall monitor the Structure Plan and review it as often as may be necessary provided that such a review does not take place within a period of less than five years* (Development Planning Act 2001). However, the current Structure Plan no longer caters efficiently for the changes that have taken place in Malta during the past decade (Attard 2000). Among these changes the most relevant have been:

- an increase in the built-up area with more complex land uses; and
- a greater dependence on the car as mode of transport.

When finalised, the new Structure Plan will have to take full account of the current situation and cater for the projected demands. To this end, the Structure Plan review process was initiated and a number of topic papers were prepared by the different units making up the Malta Environment and Planning Authority and with the purpose of identifying key land use issues which need to be addressed in the new Structure Plan. The process of completing the topic papers involved quantitative (trend and cross section analysis) as well as qualitative surveys. A host of new issues have emerged from the topic papers, which require to be addressed by the new Plan. Within this process the *Transport Topic Paper* was prepared and published in 2001 (Malta Environment and Planning Authority 2001). This presented new data which were previously being collected by the same Authority but were never made available publicly.

For the preparation of the Transport Topic Paper, the Transport Planning Unit organised a Household Travel Survey in 1998. Maltese consultants from PriceWaterhouseCoopers carried out the Survey on the 25th of November. Using a one-day trip diary the survey collected information on all trips carried out by persons aged over 11 years. Responses were received from 7,855 households (51.3 per cent of the households selected to take part) with a response rate of over 33 per cent reached in each local council area. The returns covered 20,929 people with 11,867 vehicles generating 51,392 trips (Malta Environment and Planning Authority 2001). Another data collection exercise, conducted by the Transport Planning Unit and used in the production of the Transport Topic Paper, was the Traffic Volume Survey. Traffic flow information is collected through an ongoing programme of traffic counts and since 1996 over 50 strategic locations on the road network have been monitored. In 2000 four permanent counter sites were installed to build a

long-term database at the sites where traffic flow is particularly high. For the purposes of this study, full and free permission to use these data was granted.

Two Public Attitude Surveys were conducted in December 1989 and July 1999. The first survey was conducted by the Planning Services Division, in collaboration with Colin Buchanan and Partners, for the preparation of the Structure Plan for the Maltese Islands. The survey forms were distributed in December 1989 and 2,907 valid responses were received out of an estimated 5,000. The technical report was eventually published in 1991.

The second survey was published by the Malta Environment and Planning Authority in July 1999. The forms were distributed on the 19th June of the same year and 5,719 valid responses were received. A 38 per cent response rate was achieved from the 15,000 forms sent. This survey was carried out for the review of the new Structure Plan, which is still going on.

Published data were also abstracted from two *State of the Environment* reports for 1998 and 2002. The Environment Protection Department which is today a Directorate within the Malta Environment and Planning Authority commissioned both these documents. Some studies carried out and reported in the 2002 report were relevant to land transport. These studies refer to transport use by tourists and pollution levels generated by transport, although some of the information is re-presented from studies already mentioned above and other studies on tourism.

Other policy documents provided by the Malta Environment and Planning Authority were the draft *Local Plans* (regional plans). Even though not all formally approved by Parliament, they provided examples of local land use policy, with an increasingly influential transport policy section. These were used to analyse the policy discourse during the past decade. Despite the Planning Authority adopting the transport planning role, transport planning has now also been legally assigned

to the Malta Transport Authority (Malta Transport Authority Act 2000), creating conflicts over 'who should be doing what'. The Malta Environment and Planning Authority is still actively making transport planning decisions as part of its land use planning role. At the time of writing this was a highly contested issue in particular due to the legal contradiction.

The newly-established Malta Transport Authority was also another major source of data and information. Most of the main directorates of the Authority - Roads, Public Transport, Licensing and Testing – were previously independent government departments serving under various ministers (the exceptions being the Traffic Management and Transport Strategy directorates). Not all the departments collected information and kept it in easily accessible formats, but some reports and data did emerge, especially for roads and public transport. On 15th September 1999 and 9th March 2000 a census was undertaken by the former Public Transport Authority in conjunction with Malta University Services (acting as private consultants) of all passengers travelling on the scheduled bus service (see Section 3.3.1). From these surveys and information published on route schedules the frequency of services and the number of trips performed could also be identified geographically. However, information is still missing on how the public transport functions and how trips are distributed over the network. More data will hopefully be available following with the installation of electronic ticketing machines, which will provide user data for each of the routes covered by the network.

This lack of information has hindered the proper assessment of present public transport performance. Instead sample data were collected from the field for a single bus route, which included a detailed study on the bus service (Route Number 40) for Attard, a local council district situated near the centre of the island. Using information retrieved from the Household Travel Survey, an example of service improvement was proposed in Chapter 3 (Figure 3.11).

The Malta Transport Authority has already started conducting surveys to build a land transport database. Initially it collected information on the bus routes and the location of bus stops along these routes. This involved the deployment of surveyors on each individual route who, supplied with maps and markers, identified the particular roads buses took in their journeys and the location of bus stops. Other surveys are planned, to collect more information and extend the current road accident database and update the information on the road network infrastructure.

Talks are underway on a new accident reporting system for the police to determine, amongst other things exact location of accident, junction type, causes and environmental conditions affecting the vehicles. Other data collated by the Traffic Management Directorate focus on the number of traffic management schemes implemented in various localities (Testaferrata de Noto 2003). No monitoring, however, is done to assess the performance of these schemes.

At present the Malta Transport Authority is still going through the process of capacity building, and as yet does not have the necessary resources to conduct as many surveys as it requires. For the purposes of this study, access to the available data and other digital datasets was granted subject to use only for research purposes. Other information provided by the Authority in late 2002 was provided in the form of a number of policy documents which were never published but were used internally as consultation documents. These were *The Way Ahead* written by the former Public Transport Authority in 1993 and the *Road Traffic Accident Strategic Plan* commissioned by the Department of Health Policy and Planning within the Ministry for Health. The latter was written primarily as a set of policies to reduce road accidents and increase safety on the roads. Conference material from *Moving 2000*, organised by the Public Transport Authority about public transport and accessibility, was also available through written requests to the same authority in early 2000. The most recent study to be published for the Malta Transport

Authority, however, was the Transport Infrastructure Needs Assessment (TINA) described in Chapter 3.

Another source of documentation was MediaLink, an independent library service provided through the administrative structure of the Nationalist Party in Malta. This library holds all Maltese newspaper articles in a digital database and an archive of government documents published (and some unpublished) related to Malta's administration since the mid-1900s. It provided all the *Development Plans for the Maltese Islands* following the Second World War at five-year intervals up to 1988 as well as access to the Harrison and Hubbard report (1945) on *Valletta and the Three Cities*, the first ever strategic planning document for the capital city and the Grand Harbour. Reference was also made to the electoral programmes of the three main political parties in Malta since Independence. These documents outlined what the governing party would try to achieve in the following term, thus establishing over the years the transport policy paradigm. An analysis of this is provided in Chapter 7.

Members of the academic staff at the *University of Malta* contributed some interesting reports, either prepared for Government or as independent academic research. Graduate and post-graduate dissertations provide studies on particular issues related to transport, some of which have been used and referenced in this study. Academics provided various studies on different aspects of Maltese socio-economic conditions that I have used to supplement the discussion on the origin and current state of the land transport system in Malta.

Last but not least was the use of studies and data collected by other government entities, namely the Malta Tourism Authority and the Police. The Malta Tourism Authority, through its website and publications, provided useful information regarding tourist arrivals and use of public transport by tourists. It also has an extensive list of publications related to its Research and Development Directorate.

The Police provided the accident data. Even though they were not location-based, they served the purpose of comparing Malta's accident and fatality rates to other European Countries.

5.1.2 Visualising transport information using Geographic Information Systems

"*Maps have an important place in scholarly writing. Historians, sociologists and other humanists and social scientists often write about territories and neighbourhoods, about global disputes and local conflicts, and about causes and correlations involving aerial differences, regional clusters, and other spatial patterns. By helping readers visualise regions and comprehend relative distances and other geographic relationships, maps amplify an author's sentence and paragraphs. After all, a two-dimensional stage may be more efficient than a one-dimensional event. And symbols spread across a map can more effectively communicate the details and structure of neighbourhoods, landscapes and battle zones than words alone. Military strategists and urban planners need maps, and so do scholars whose subjects have any geographic aspects*" (Monmonier 1993).

Reading Monmonier's opening paragraph to his book was the inspiration to using maps in this study to visualise spatial information on land transport in Malta. The benefits of displaying spatial information and using it for policy making are widely acknowledged. Back in the 1800s, when the Great Trigonometrical Survey of India commenced, one factor influencing the decision whether to start the survey was the benefit that would be achieved from having a map showing Governor-General Wellesley's conquests. The utility of map-making as an instrument of policy was already well understood then (Keay 2000).

The power of geographic information and data is enhanced with map outputs. The build-up to the map is a laborious task, but it can lead to a very important moment in the process of decision making. This study utilized the functionality of maps for

portraying data in an accessible manner and at the same time to aid in the process of collecting information from interviews.

The data were mainly collected from secondary sources, namely the Household Travel Survey and the 1995 census noted above. Table 5.3 summarises the details of the datasets utilized in this study. Other sources were:

- public transport routes, published in a report by the Public Transport Authority, and
- fieldwork involving surveying and data collection on particular public transport routes.

Arcview by Environment Systems Research Institute (ESRI) was the main software utilized for this study. It provided enough functionality to create the outputs for the maps. Arcview version 3.2 and version 8.2 were both used in conjunction with the Spatial Analyst extension. The latter provided the spatial statistics required to compute density maps such as Figure 3.1. MapInfo version 6.5 was also used to convert much of the data from Mapinfo (.tab) formats (as provided by the Mapping Unit of the Malta Environment and Planning Authority) to Arcview (.shp) format. Much of the data was available in Mapinfo and much time was spent on the process of converting the data. Because of its added functionality, Arcview was chosen as the main software package to build the land transport GIS and carry out the spatial analysis and data visualization required for this study.

Datasets	Source	Year	Format	Description and Usability
Malta Base Map	MEPA*	1988	Digital	Base map showing mainly the local council boundaries, and some selected towns and villages.
Arterial and Local Access Roads (no standard street centre line)	MEPA	1998	Digital	Base map of the land transport network classified into (a) Arterial and Distributor Roads and (b) Local Access Roads represented as polylines not as a network.
Public Transport Bus Routes for Malta	MEPA, data generated by author	1998	Digital	Bus routes of the present scheduled bus service for Malta from Valletta to the outlying villages. Additional data was manually inputted as it became available.
Traffic Volumes Street Database	MEPA	Various	Tabular	24-hour weekly traffic data for set locations along the arterial road network.
Trip Distribution Dataset	HTS*, MEPA	1998	Tabular	Locality based data for employment, shopping and educational trips done by individuals in the surveyed households
Employment Hot Spots	Generated by author	2002	Digital	Location based point data related to major employment sites. Information regarding these sites was collected through the Malta Development Corporation which runs industrial estates and information regarding other major employment nodes.
Car Ownership Data	HTS, NSO*	1998	Tabular	Car ownership by locality was extracted from the Census for Housing and Population (1995), whilst the HTS survey provided more recent data on the number of cars per surveyed household in 1998.
Proposed Public Transport Network	Generated by author	2002	Digital	Point and line data based on the five hub system with the linking edges and proposed bus network.
Public Transport use with car availability	HTS, MEPA	1998	Tabular	Locality based data with the number of trips performed by bus when car was or was not available.

Table 5.3 Datasets used to generate the land transport Geographic Information System for Malta.

*HTS – Household Travel Survey, MEPA – Malta Environment and Planning Authority, NSO – National Statistics Office

As can be seen in Table 5.3, the locality based data was mostly available in tabular format, which required manual inputting and manipulation into the existing local council boundary base-map layer, obtained from the Mapping Unit of the Malta Environment and Planning Authority. This database was subsequently used to overlay most of the transport and socio-economic data for each locality (see for example Figures 6.2 and 6.3).

Public transport data were also extracted from the studies carried out by the former Public Transport Authority. Bus route information and patronage was manually added to the digital data, which was available from the Mapping Unit. Maps generated from these data included visualisation of patronage (Figure 3.10), frequency, and daily number of bus trip per route for the daytime service (Figure 3.8). The night service is presently being analysed by the Authorities and as yet only indicative information is available (Figure 3.9).

The traffic distribution map of the arterial and distributor roads (Figure 3.1) was the most time-consuming reconstruction and data manipulation exercise. At present, the digital road and street network is in the form of a series of non-standard lines (also termed *polylines*) without the attributes necessary to achieve classification as a network. The lines are fragmented into segments, which makes selection of a particular street or road very difficult. Attaching traffic data to streets therefore became a very complex exercise. There is also no reference to any of the attribute data associated with a network such as traffic direction, junction name, line length, street name, type of road and speed limit. In comparison, these criteria are standard in the Ordinance Survey Roads Database for the UK (Ordinance Survey 2003). Figure 5.1 shows a detail of the base map, and also outlines some of the problems associated with the data.

These problems made representing location-based traffic volume data very difficult. The traffic collection points on the network were identified and the known value

was attached to the respective line segment. Assuming that there is a correlation between the values of adjacent street line segments, the unknown values were assumed from the known adjacent segments. The possibility of grading the values to eliminate peaks of traffic in certain segments would have meant fewer errors in the data, but because of the scale and use of the map, this simple generalisation technique was used. The assumption is that the greater the distance from the known segment value, the more inaccurate the estimated values become. For the purpose of the visualization and the scale at which the map was going to be used, the exact locations of the data collection points were not added to the map. The list of locations is, however, included for reference in Appendix V.

Figure 5.1 Some of the problems with the road and street lines database which is presently available in Malta. Drawn by the author. Data Source: Mapping Unit, Malta Environment and Planning Authority.

Other techniques were used to visualize the data in map formats. These included: (a) the use of graphical representation of data on maps (Figure 6.2), (b) the use of spider maps (after Monmonier 1993), which are very efficient at presenting directional data for trip distribution (map detail of employment trip distribution in Figure 3.11); and (c) a multi-map technique which represents three maps together in one figure, using the same legend to represent different variables, such as employment, shopping and educational trip data (Figure 6.3).

As will be discussed in detail in Chapter 6, this information partly supported the proposed changes to the public transport network. To this end, a new structure was drawn up for an alternative public transport system (Figure 6.4). This distributes the interchange functions of the present Valletta main terminus to five outlying hubs, dividing Malta into five regions. Despite the model lacking much of the desired background statistical and operational information, it assumed that efficiency would be improved through reduced congestion, reduced journey lengths and improved service coverage. These assumptions are based purely on geographical distributions of land use and population.

The construction of the map can be controlled in many different ways, until the relationships within it have been perceived (Spence 2001). Most of the maps constructed for this study were used in the interviews with stakeholders (for example, Figures 3.1, 3.10, 6.2, 6.3 and 6.4). This approach was seen by the researcher as adding value to the responses of interviewees with reference to particular issues or concerns raised during the interview. This visual approach was also new to many in the transport industry in Malta.

5.2 The sociological institutionalist approach to transport policy analysis

In order to achieve the fourth objective of this study, which aims to analyse transport policy and identify the difficulties of implementing the proposed policy framework suggested in Chapter 6, the sociological institutionalist approach was used to analyse transport policy. This section deals with explaining this approach and defines its principle organising concepts. It also explains what documents were reviewed in the process, the structure of the interviews with stakeholders, and the public meetings reported in this study.

A number of different approaches to policy analysis are labelled as 'institutionalist' (Hall and Taylor 1996; Jessop 2000). A sociological institutionalist approach, however, has emerged as a distinct approach in policy studies (Rydin 1993; Amin and Thrift 1994; Healey 1997) and has been so named because of the influence it derives from sociological theory and the work of Anthony Giddens in particular (Hall and Taylor 1996). A sociological institutionalist approach is thus concerned with determining where power and influence is, while accepting that public problems are social constructs that are developed and understood through social relations (Vigar 2002). It places particular emphasis on the influence of social relations on ways of seeing and knowing the world, and ways of acting in it (Healey 1997).

The role of the organisation is very important in any form of institutionalism, but with the sociological institutionalist approach the definition of an institution is widened to encompass all established ways of addressing certain social issues (Healey at al 1999). Therefore it is important to discuss the structure, history, personal networks and past decisions of organisations in trying to explain policy (March and Olsen 1976). In adopting this approach in their study, Vigar et al. (2000) focus on the analysis of policy discourses and policy networks and arenas.

Hajer (1995) defines the analysis of *policy discourse* as a tool for dissecting and interpreting policy change. Policy discourses are specific ensembles of ideas that are produced, reproduced and transformed in particular practices, and through which meaning is given to physical and social realities (Hajer 1995). This approach emphasises the importance of communication in policy analysis and planning. Discourses do not directly equate with power but they can highlight or imply where power lies. Discourses can express thought and desire; they are institutionally based, materially constrained and are manifestations of both social and power relations (Harvey 1996).

Discourse is used in this study to act as a lens through which the world is viewed (Kuhn 1970). The dominance of a discourse can thus be a factor in explaining policy inertia as well as a source of potential change. In this study the analysis of formal policy documents in Chapter 7 sets out the different policy discourses of particular organisations or committees and how they bear upon policy.

The other tools of sociological institutionalism explore the institutional relations of policy making. *Policy networks* are deployed to illustrate and help understand why and in what ways stakeholders coalesce around particular discourses. Networks provide a way both of categorising the important linkages between actors within and between policy systems, and of identifying the importance of such relations in the determination of policy (Vigar 2002). Section 2.2 of this study identified the formal administrative structures in Malta, whilst Section 7.1 attempts to systematically set out the networks between the different organisations in order to explain policy outcomes.

Marsh and Rhodes (1992) identify different types of policy networks. These occur at different dimensions, and the relevant communities and issues available for discussion are varied. It is acknowledged, however, that within the small island context the number of stakeholders or communities of stakeholders cannot be

high. The integration of the government entities, the academic institutions and the various stakeholders (including the public) occur at one national level. This does not translate into policy integration, however. The interviews designed for this study aimed to elicit some information about a respondent's situation within the transport debate and that of his/her organisation.

Policy arenas then constitute the institutional 'sites' where policy issues are discussed. Examination of the nature of these 'sites' enables the discussion of transport issues to be located among other significant sites of discussion, whether formally constituted or not. In this manner, the analysis looks beyond the formal structures to the quality of the relations among the stakeholders. The arenas may be formal mechanisms, such as public meetings or workshops, or informal contacts. These arenas also exclude some participants and privilege others.

The concept of policy arenas directs attention to traditional organisational structures and formal regulations and also to what Healey (1997) terms soft and hard institutional infrastructures of policy making. The hard infrastructure refers to formal organisational structures, departments, formal committees, laws, taxes and subsidies, whilst the soft infrastructure refers to social relations, informal networks, informal arenas, administrative routines, professional cultures and social worlds (Healey 1997). The assessment of both hard and soft policy infrastructures is necessary: while it has been hypothesised that changes in hard infrastructures may lead to changes in policy and practices (as suggested by Flyvbjerg 1998) is important, altering organisational culture and informal routines is likely to be at least as significant.

In a small island society, even though there are hard infrastructures in place, it is also worth noting that individuals with relevant professional qualifications are few, and the influence of soft infrastructures on policy making might be proportionately greater. Personal relationships between individuals in different institutions play a

significant role in the integration and adoption of policy. This is sometimes upset by consultants who do not fit comfortably into these 'soft' infrastructures, especially if they underestimate the importance of local knowledge. Very few transport consultants (mostly British) have actually lived in the islands long enough to be incorporated into these arenas. Nonetheless, the British have heavily influenced the (land use) planning processes in Malta, and even though there is physical separation, the similarities between the processes in both countries are still many.

The organising concepts of the sociological institutionalist approach are central to this study as they help in structuring the analysis of transport policy over time. To avoid being too descriptive in the policy discourse analysis, the documents reviewed and the outcome of the interviews in Chapter 7 are organised around two opposing views. On one hand, there is a discourse driven by the traditionalists, who resist change and want more unsustainable mobility. On the other hand, there is a shift to the central question of sustainability driven by the few who have appreciated the impacts of uncontrolled mobility.

5.2.1 Approaches to transport policy analysis 1 – the policy documentation review

The initial analysis required for this research was to understand the transport policy scenario. At first research focused mainly on reviewing all possible documents written on land transport. Whether these were part of policy or not was not regarded as important at the early stages of the research. It became evident after a few months of literature search that not many documents were written (at least publicly available) outlining any transport policy for the Islands. This was seen as a set-back as there was not enough documentation to build a solid background against which to conduct the interviews.

Initial informal meetings with some of the stakeholders and contacts who worked in agencies such as the EU Information Centre provided documents related to Malta's accession process and the National Programme for the Adoption of the *Acquis*. With this in hand, and several other documents which had been published on the web, several meetings were possible with consultants and employees within the various government departments to obtain more information.

The *Structure Plan for the Maltese Islands* (1992), and the Marsaxlokk and Grand Harbour Local Plans provided the legal planning framework for transport policy in Malta. The review of these documents provided the background for further reading. Draft Local Plans were also consulted, despite the fact that they had not been formally approved by Parliament. Other unpublished policy documents were mentioned in reports and gaining access was not an easy task. In most cases, as mentioned later in section 5.3, gatekeepers did though provide the required access.

In the absence of a 'transport needs' discourse in land use and transport planning documents, other sources including party political documents were examined. Since there was no published government policy framework for transport, electoral programmes were used to abstract the transport plans of political parties during elections. Even though reference to transport is always limited, it is interesting to find a gradual development of fragmented, even though sometimes repetitive, transport measures (for example, new buses to improve public transport). However, there are hardly any references to a general framework.

The discourse used in electoral programmes changed over time. Because there has never been a formal structure for transport policy in Malta, the policy discourse was not continuous. There has never been a structure that gave meaning to the complex social world by means of storylines. The storylines that provide the narrative allows a politician to illustrate where his or her work fits into the 'jigsaw' (as suggested by Hajer 1995). This could be related to electoral promises in the case of Malta.

Electoral promises, however, are of course not binding, and there are Maltese examples of strategies which have not been implemented because of their unpopularity with the electorate.

Other transport-related documents produced by non-political institutions are unpublished reports which unfortunately were never endorsed by the relevant cabinet. The documents reviewed for this study include the following:

1. *The Way Ahead,* commissioned in 1993 by the then Public Transport Authority, never officially published, showing the state of public transport at the time and proposals to overcome the problems.

2. The *Road Traffic Accidents Strategic Plan* written by a Committee in 1996 that had been set up by the Ministry for Health to improve safety on the roads and minimize accidents. This document was developed to be part of a National Health Action Plan. After administrative changes following the 1997 general elections, the document was shelved.

3. With a new Labour Government in power, another Committee for the prevention of road accidents was set up and submitted a report in 1997 – *Report of the Committee for the Prevention of Traffic Accidents.*

4. The *Guidelines for Controlled Parking Schemes,* published in 2001 by the Committee for the Creation of Residential and Commercial Parking Schemes. This document was endorsed by Cabinet and distributed to Local Councils. It provided practical policy guidelines for the adoption of time-controlled parking within local council areas. This is probably the only policy document approved by Cabinet and successfully implemented.

Review of these transport documents was not easy, first because the three unpublished documents were only made available towards the end of the research. Second, most of the policy discourse used is totally fragmented and does not follow a general framework. Therefore, much of what is proposed would require related policy which does not exist. For example, improvement and increase in patronage of the public transport can only be achieved through structural improvements in the system (some of which are proposed in the present thesis) and the introduction of restrictive measures on car use, which did not fall under the powers of the Public Transport Authority. Third, the documents were prepared by different entities with different ministerial agendas. Whilst *The Way Ahead* focused on public transport and was prepared by the then Public Transport Authority, the *Road Traffic Accidents Strategic Plan* was similarly dealing with transport issues but was commissioned by the Ministry for Health. This is evidence of fragmentation in the political arena of transport. These documents were a response to particular situations. Policy making becomes therefore a form of crisis management (i.e. action is taken in response to a current crisis or problem). In Malta, the implementation of measures is determined by emerging pressures on politicians, for example by small pressure groups or businesses, as opposed to policy determined by Government and followed by planning, implementation and monitoring.

The arena for the drawing up of the Parking Guidelines was one of the most innovative in approach. It was the result of pressures from local council administrations to provide a solution to the parking conflicts between residents and commuters in their town centres. Each Local Council was proposing to introduce different measures, some as extreme as charging road users, which would have gone against Government policy at the time. Therefore the initiative to create a committee was inter-ministerial, with members drawn from the Local Councils Department, the Malta Environment and Planning Authority and the Ministry for Transport. Eventually this committee was formalised within the structure of the new Malta Transport Authority.

The detailed descriptions of policy documents reviewed in Chapter 7 were necessary for two reasons. First, a review such as that presented in this study had never been carried out before. Second, a background knowledge of the development of policy in Malta was essential to the research interviews, to enable interpretation of the responses of stakeholders who had been part of this development. Lack of knowledge of the past and current policy discourses would have been seen as a weakness on the part of the interviewer when questioning future developments.

5.2.2 Approaches to transport policy analysis 2 – interviews and public meetings

In an attempt to better understand the policy perceptions and the problems of policy implementation in transport, interviews with local and government stakeholders were carried out. Another aim was to understand how individual people's experiences and views are reflected in the land transport policy adopted in Malta. The interviews allowed loosely-structured questions to be put and a conversation to follow. Eyles (1988) describes an interview as a conversation with a purpose. According to Silverman (2001) and Burgess (1984), interviews create a richer, detailed and multi-layered response that might lead into issues never explored, refining the study as it progresses. Hine (1996) suggests that in-depth interviews are used where an understanding of perceptions is required. In his study, which assessed the impact of traffic on behaviour and perceptions of safety, Hine uses in-depth interviews along with other data collection methods, more common in the transport field. Many authors have seen the need to understand human insights better rather than focusing solely on technological views (Craik 1969; Appleyard 1979).

An interview guide was used in this approach, that is, a list of questions that are explored in the course of the interview (Patton 1990). This guide ensured that in each interview the information obtained from the interviewees covered approximately the same ground. The interview guide also enables the interviewer to probe and explore issues that will illuminate that particular subject. A copy of the interview guide is found in Appendix VI.

The interview design consisted of two parts. The interview began with general questions relating to the position of the interviewee within the organisation and his/her responsibilities, other commitments in other organisations or committees, length of time in this position, and qualifications. This served to orientate the interview towards the person's responsibilities and provide the necessary background about their experience. The second section in the interview sought responses to the map outputs, showing the present situation in terms of the density of traffic volumes along the arterial and distributor road network (Figure 3.1), public transport patronage (Figure 3.10) and car ownership patterns (Figure 6.2). Third, the policy package was discussed, focusing on the proposals to provide more efficient public transport and the application of restrictive policies for road use and parking.

The second section proceeded in three stages. The first presented the current state of land transport on the island and was aimed at eliciting reactions to strategies already in place to solve particular problems. The second stage was to assess whether people were aware of the available data and the benefits associated with information in the decision-making process. The third and final stage explored the perceptions of stakeholders to proposed restrictive strategies on car use and a new proposed public transport structure. The responses from these last questions also suggested whether the policy proposals could be successfully implemented.

Most interviews were successfully recorded and transcribed. Tapes and transcripts have three clear advantages compared with other kinds of qualitative data. First, tapes are a public record and can be replayed. Second, transcripts can also be improved, and third, recorded tapes preserve the sequence of the discussion (Silverman 2001). Transcripts have been used in the analysis, and the interpretation of these is discussed in Chapter 7. However, because of the inconsistencies between the views of the various interviewees, and the author's position as an insider, it was deemed improper to personally identify individuals or organisations in the analysis. A general overview is therefore presented to protect both the individuals and the organisations they represent.

The objective of this exercise was to interview eleven stakeholders; one person from each of the organisations dealing with land transport. After repeated requests for interviews, both in writing and by telephone, nine people agreed to sit through a formal interview. Table 5.4 lists the people engaged in this study with their relevant positions and experience.

Access was not a straightforward procedure. The points of contact the researcher has with an institution, organisation or group, influence the collection of data and the subsequent perspective that can be portrayed (Burgess 1984). The access obtained for this research gradually increased over the months during which the practical fieldwork was carried out. Access was also granted thanks to some key individuals who used their power as gatekeepers both in enabling me to interview other people and permitting me to access a lot of information which otherwise would not have been available. Gatekeepers are those individuals in an organization who have the power to grant or withhold access to people or situations for the purpose of research (Burgess 1984). In this case, the Deputy CEO at the Malta Transport Authority, David Sutton, acted as the main gatekeeper by assuring other interviewees that the research objectives would not harm them or their industry in any way. Other gatekeepers, who increased the accessibility to further information

were the Chairperson of the Transport Authority, who, after agreeing to an interview offered access to all the internal documents I had asked for, and to which I had previously been refused access!

Table 5.4 Details of the stakeholders interviewed for this study.

Name of Interviewee	Position	Experience
Mr. Censu Galea	Minister for Transport and Communications	Architect and in his fourth year of term.
Mr. Charles Demicoli	Chairperson – Malta Transport Authority	Business/managerial experience.
Mr. David Sutton	Deputy CEO – Malta Transport Authority	Former transport consultant with Colin Buchanan and Partners, UK.
Mr. Lucien Stafrace	Head, Transport Planning Unit, MEPA	Architect with eight years experience of working in transport planning.
Major Peter Ripard	Consultant – Malta Transport Authority	Former chairperson of the Traffic Control Board.
Mr. Joseph Caruana	Director, Public Transport Directorate, Malta Transport Authority	Six years public service as Manager in the former Public Transport Authority.
Mrs Audrey Testaferrata de Noto	Director, Traffic Management Directorate, Malta Transport Authority	Four years as architect (road design and construction) at the former Roads Department.
Mr. Emmanuel Delia	Personal Assistant to the Minister for Justice and Local Councils	President of the former Parking Committee hosted under the Minister for Justice and Local Councils.
Mr. Victor Spiteri	President, Public Transport Association	Bus driver and owner. Elected president representing the Association of bus owners.

Another aspect which in many respects aided progress in interviewing the stakeholders was the fact that the researcher was local and had had previous contacts, both professionally and socially, with some of the stakeholders. There are

some situations where researchers, as insiders, are familiar with the cultural setting. Therefore, during the interviews care was taken to meet the demands made by the participants. In such situations, interaction is considered 'natural', as the researcher has rapport with those who are being studied, shares the same language and the same socio-political context (Burgess 1984). These led in some respects to advantages in obtaining information and, in some cases, access to the interviewees themselves.

Since the interviews were semi-structured they varied in duration. Some interviews lasted up to four hours, whilst others lasted less than one hour. The average of one and a half hours was the case for most interviews, and whilst most interviewees were very animated and produced very interesting insights into the socio-political situation, others simply responded briefly and limited themselves to facts, not opinions. Towards the end of the research, with increased access to the Transport Authority personnel and documents, more insight into policy was gained.

Further to one-to-one interviews, the study will also review two public meetings. A conference entitled *Moving 2000* was organised by the Public Transport Authority in 2000 and stakeholders were invited to present papers on topics concerning public transport in Malta. In some of the presentations it was very evident that there was frustration at the lack of political will to invest in public transport, as well as with the inadequate management provided by the Public Transport Authority. It was also the first time ever that some types of public transport data were presented and published.

The author also organised a public workshop entitled *The Future of Transport Policy in Malta – A Discussion Workshop* at the University of Malta in May 2002. This was organised under the auspices of the Geography Division of the University and the University of Malta Geographical Society (U.M.G.S.). In all, 50 participants attended the workshop. Among the organisations represented there were the Malta

Transport Authority, the Malta Environment and Planning Authority, the former Traffic Control Board, the Ministry for Tourism, the Nationalist Party, Friends of the Earth (Malta), the EU Directorate within the Ministry for Foreign Affairs, the EU Information Centre, the Public Transport Association, the Foundation for Transport Studies and the Parking Committee of the Ministry for Justice and Local Councils. Some of the members of the general public also attended. Following a short presentation on the impacts of increased mobility by Professor John Adams (guest speaker) and on the current situation of land transport in Malta (by the author), a discussion was initiated, focusing on major issues presented by the speakers.

The relevant comments from the workshop are reported in this study. This methodology was also used by Docherty (2001), who reported a meeting of the RGS-IBG Transport Geography Research Group discussing the 10-year plan which the UK's Labour Government had just published in 2000.

5.3 Problems and responses to innovative approaches

The use of interviews as a methodology to extract perceptions is not in itself innovative, but the use of visual aids (cartographic representations) is. Introducing the elements of a map not only eased the explanation of spatial problems but also created curiosity and interest.

The most common problem was the fact that, except for two of the interviewees, none had ever used maps to analyse information and they had very little knowledge of what a Geographic Information System was. The interviews therefore served as a learning tool, whereby the persons interviewed gained an appreciation of:

- the power of maps to convey information and statistics;
- the support maps offer for decision-making; and
- the importance of data and the possibilities of collecting more information for analysis.

In some cases, this led to a certain amount of time spent on explanation. Prior to the start of conducting the interviews, the author assumed map-reading abilities, but this was not the case for some interviewees. In practice, though, this had a positive side, as the short explanation required to describe the elements of the maps and their purpose, led to more meaningful replies, and in some cases generated interest to see more of the GIS system capabilities.

5.4 Data inconsistency, initial difficulties and resulting benefits

Collecting information in a fragmented archive system on all the aspects discussed in this study was not a simple task. In the absence of a permanent and centralised system of data warehousing, the research was based on information and data collected through various contacts within different departments, ministries and authorities. It was evident, in the interviews, and subsequent meetings, that the administrative fragmentation had led to the belief that data were not available, whilst in many cases it was simply the case that they had not being collated or published.

There are however, other issues related to data inconsistency, such as the lack of standard methods of data collection. This produced inconsistencies in the data, which were questioned during seminars and public presentations of the research for this thesis. Funding opportunities from the EU framework projects might support research leading to a more comparable data set.

The lack of a national spatial data infrastructure was another major problem, especially whilst trying to build the land transport GIS. The Mapping Unit within the Malta Environment and Planning Authority has ownership over the topographic map of the islands, and access to this database is extremely expensive, even for research purposes. Free access to the data presented in this research was through the Transport Planning Unit, within the same authority. Even here, however, there were data inaccuracies and errors which rendered some of the data unusable. Resources were therefore required to clean up the digital map data and input socio-economic data which were not available in standard digital formats (such as databases or spreadsheets), and required converting from paper data into digital formats.

The benefits acquired in this research from facing these problems can be summarised as follows:

- the knowledge acquired on the use of a GIS, especially issues related to managing data errors and problem solving;
- the ability to customise the data and create meaningful outputs;
- the use of data manipulation techniques for the representation of information; and
- the opportunities for new research in the field of transport GIS in Malta.

Another problem was created by the fact that two stakeholders did not participate in the interviews. The Roads and the Licensing and Testing Directorates are the two within the Transport Authority with the largest financial flows. Whilst the Roads Directorate is the sector which manages the largest amount of government spending, the Licensing and Testing Directorate is one of the largest generators of government funds. They are mainly operational directorates but their role is crucial within the islands' land transport administrative structure. It would have been interesting to include their perspectives in this study.

The overall lack of relevant professional qualifications was a determining factor in exploring particular issues in the interviews. Few public officers are qualified transport experts and, in trying to explain the relationships between socio-economic trends, transport demand and overall fragmentation of policy measures, it became clear that they had received limited exposure to transport policy as a discipline. The predict-and-provide philosophy had been engrained for so long and so deeply in the system that most did not perceive any other ways of making policy. This made some of the questions in the interview guide redundant. The results obtained in these interviews will be explained in more detail in the following chapters.

5.5 Conclusions

This chapter presented the sources of information, the methods and the tools used to complete this study. The initial sources provided the information regarding the current transport system and how it developed. With the use of a Geographic Information System, it was possible to visualise on maps the spatial information in a way which is understandable. The method used to analyse policy was through the sociological institutionalist approach which looks at policy discourse, networks and arenas. This method was explained in this chapter and applied to this study. The chapter also looked at the use of innovative resources in qualitative research; the use of map outputs to enhance the interview responses from the stakeholders. Finally, the problems encountered with the selected methodology were described and the resulting benefits identified. The next chapters will deal with the final objectives of this study, proposing the policy framework and analysing policy discourse and networks.

6.0 Policy priorities for land transport in Malta

This chapter discusses the third objective of this study - a new transport policy framework for Malta aimed at reducing car dependence and complying with the European Union's objectives of 'sustainable' transport. Earlier on, Chapters 2 and 3 identified the origins of the current problems and Chapter 4 indicated the policy framework in Europe needed to achieve environmental sustainability. These chapters addressed some of the problems of adopting 'sustainable' transport policies and surveyed the background literature upon which the recommendations made in this chapter are based.

The policy proposals presented in this chapter are based mostly on the European Union approach to transport policy and the recommendations proposed by the European Conference of Ministers of Transport. Malta's accession to the European Union and membership into the Conference means that it has to participation in the debate and adoption of proposed transport policies. The overall policy package is innovative for Malta. Five policy priorities and complementary measures are identified in the first part of this chapter. The second part presents some proposals and looks at their possible implementation in detail. These measures are then discussed in the interviews to identify the problems associated with their successful adoption within the Maltese context. This, however, is the fourth objective of this study and will be discussed in the next chapter.

6.1 Policy framework for 'sustainable' transport

In 2001 the Planning Authority within the Ministry for Home Affairs made a proposal, in the form of a Memo, to the Ministry for Transport and Communication about the need for Malta to have an integrated transport strategy. This draft memo presented a concept new to Malta: that organisations,

different modes of transport, environment protection and land use planning should be integrated. It presented policies for better education, awareness of transport impacts on health, improved economic development and use of financial and fiscal measures, in order to develop a long-term national strategy for transport. Following the publication of the Transport Topic Paper in 2001, it was recognised that "*an Integrated Transport Strategy needs to be a government strategy, rather than that of one organisation. In this way, whilst the Structure Plan is not the most suitable instrument for an Integrated Transport Strategy, the Planning Authority through the Structure Plan can draw upon and implement elements of the Integrated Transport Strategy, as can other organisations through their own policies and programmes.*" The pre-requisites for the successful adoption of this strategy were identified as being:

- strong political backing;
- a workable institutional framework; and
- better communication with the public.

The recommendations suggested in the memo to Cabinet were aimed at introducing the principle of an integrated transport strategy and to propose the formation of a committee with the task of outlining an overall strategy. Unfortunately this attempt by the Ministry for Home Affairs failed because of the organisational changes which were occurring at the time within the Ministry for Transport, particularly with the setting up of the Malta Transport Authority.

The Authority became fully functional at the end of 2002 with the appointment of the first CEO. However, until the writing up of this study, it had still not produced the much needed national transport strategy. Apart from the constant pressure from the Malta Environment and Planning Authority, the expectations of the public are now high, with the Authority formally set up and a relatively new government. The matters related to the EU accession process dominated the country's administration and the political scene for the decade to 2004. It is

evident that with accession now achieved, the Government has to propose plans for the development and maintenance of particularly important sectors in the islands. Land transport is a high priority.

Malta will also be required to participate in the realisation of the objectives required by the EU Common Transport Policy. The main asset of the EU White Paper of 2001 is that, even though there are few new priorities (the majority of the issues addressed had already been raised in the previous White Paper of 1992 and related Action Plans), this new policy document is meant to act as a lever, forcing Member States to take decisions on outstanding issues. Malta has for too long avoided dealing directly with transport planning and policy, to the extent that the present unsustainable dependence on the car, the declining public transport services, and the limited space resources are all demanding immediate action.

Within the transport policy context for the islands, achieving a balance between modes of transport is the key issue. The aims of the proposed strategy would be to:

- introduce policies of best practice, especially related to modal shift;
- be innovative and introduce policies to curtail the growth in private car use, increase use of public transport and integrate land use and transport planning at a higher level; and
- employ pricing methods to discourage car use and promote other more equitable and environmentally benign travel modes.

There are parallel concerns in the overall package, as policies overlap between the various issues; for example, improvements to public transport would be relevant to improving urban transport and environmental impact, increasing accessibility and encouraging modal shift. The main elements of the policy framework proposed in this study are suggested in Table 6.1. However, the

physical, economic and socio-political constraints of Malta's size and isolation dictate a limit to how many of these measures can be adopted. The implementation of some of the proposed measures is discussed in more detail in the second part of this chapter.

Table 6.1 The proposed policy priorities for a national transport strategy.

Priority 1. Shift modes of transport by improving public transport and restricting car use
Priority 2. Increase safety in the road environment to reduce road accidents and encourage walking and cycling by providing infrastructure
Priority 3. Improve urban transport with the use of traffic management schemes and pricing schemes to control traffic through towns and improve the urban environment
Priority 4. Integrate land use and transport planning
Priority 5. Improve research, monitoring and enforcement of policy measures for the purpose of education whilst increasing awareness of improvements in transport

Policy priority 1 is central to introducing the concept of sustainability in transport. With car ownership levels rising very dramatically over the past decade, the aim of balancing the modal shift and increasing the number of bus users would reflect positively on all other objectives. The measures could be summed up in three sub-headings; first, improvements in public transport, second, restrictions on car use and third, voluntary travel behaviour changes to modal choice. Collectively these measures are listed in Table 6.2

These measures require the coordination of various organisations. Declining public transport patronage and increasing demands for subsidy have led the present administration to take a stronger political stand to change and improve public transport. The policy should also aim at re-balancing the infrastructure investment. Even though the government has acknowledged the limited space

for further road construction programmes, there is still a strong drive to provide for the private car (in terms of alleviating traffic congestion through road re-construction and road widening programmes) and relatively little investment in providing alternatives.

Table 6.2 Measures proposed to achieve Policy Priority 1.

Improvement in public transport services	- upgrade the infrastructure - provide services according to demand - increase efficiency through enforcement and bus priority - invest in research and professional training of staff - monitor public transport operations
Imposed restrictions on car use	- limit parking availability for commuters - use of workplace travel plans to encourage better use of the car or public transport - increase pricing on fuel and use of the private car - control access to 'traffic-sensitive areas', for example, Valletta city centre
Voluntary travel behaviour changes to modal choice	- draw up (cost-effective) incentives to use alternative modes to the private car - use right marketing approaches for improvements in public transport - target small behavioural changes amongst those members of the population that profess an inclination for mode change - introduce a reward system to encourage more users to switch mode

The improvement in public transport complements the objective of achieving modal shift in Malta. Modal shift cannot occur if the most cost-effective mode is still the private car. There are two stages to achieve this. Primarily, the improvements should aim to maintain the present bus users and thereby halt the trend of bus users shifting to private car use. Second, the Authorities should try to achieve a gradual increase in patronage. This could be managed in several ways, such as the provision of specific direct services between localities, regularising the night bus service, and introducing direct services for particular

land use activities (for example, by university and college students). A proposal for the improvement of public transport services is suggested in the second part of this chapter.

Workplace travel plans are suggested in this study as an efficient method of reducing traffic and encouraging modal shift, especially during work related trips during peak hours. The concentration of traffic in and around the main urban area, where most of the employment trips are made, suggests that a policy measure to curtail travel to work by private car would significantly affect the traffic volumes on the road. This policy is relatively innovative for Malta and would require considerable backing from both private industry and government entities.

Voluntary travel behaviour change approaches are defined as those where the objective of the program is to allow people to choose to change travel behaviour rather than to expect or force reactions in response to external stimuli or pressures (Taylor and Ampt 2003). Therefore the approach empowers and educates people to make deliberate choices regarding travel mode, rather than unconsciously stepping into a car whenever a perceived need arises. These approaches have been extensively used in cities across the UK (see Cairns et al 2004) and Australia (see TravelSmart Australia 2005).

Policy priority 2 of the proposed national transport strategy deals with safety in the road environment. With the increasing number of cars on the road, the street environment has become dangerous and unfriendly to non-car users. Although Malta's road accident fatality rate may at first inspection seem fairly low, this must be placed in the context of the distances travelled being relatively low and the road infrastructure not allowing for particularly high speeds. Taking into account such factors, Malta does not compare well with other countries. The average number of road fatalities in Malta over the past decade has been 15 persons per year. Pedestrians are also a high-risk group, with most collisions

involving pedestrians resulting in them suffering mostly from injuries, with very few deaths. Even though road accident data collection has improved, more information is required on the causes of accidents. There is a major drive within the European Union to improve road safety. This is in part to fulfil the objective of the White Paper to halve the number of deaths on the roads by 2010 (Section 3, IIB of the 2001 White Paper). In the case of Malta, a number of measures to improve road safety could be adopted. These are:

- improve road design to reduce vehicular accidents
- improve safety and access for pedestrians and cyclists
- improve driver training, testing and vehicle condition
- provide safe routes to schools
- improve safety at bus stops, subways and other areas of the road to reduce public fear, particularly at night
- reduce speed

Over the past decade only cosmetic changes to pedestrian walkways have been implemented, whilst the over-provision for motorists in some areas has completely removed any possibility for pedestrian and cyclist infrastructure. The reduced provision for cycling in traffic and a very poor bicycle culture mean that only a few consider the bicycle as an alternative mode of transport. From observation of current behaviour – with the bicycle essentially not being used for anything other then leisure - one might assume that cycling would not be an easily adopted mode of transport for daily journeys. The provision of infrastructure could make a difference for small sections of the population, mostly the young. It is highly unlikely, however, that local or national governments would invest money in projects which do not have widespread (and immediate) benefit for the majority of the population.

Policy priority 3 is very relevant to Malta, with its high population density and concentration of activities in the urban area, causing problems of congestion and pollution. Measures proposed under this policy priority include:

- traffic management schemes to limit and control traffic in towns
- pedestrianisation schemes
- promotion of alternative fuels and use of small engine vehicles
- use of fiscal measures to deter car use
- tax differentiation for engine size and vehicle use
- road pricing schemes
- parking restrictions and charging

Traffic management schemes have been widely adopted by all local council areas around Malta. Central government (through the Malta Transport Authority) acts as a regulator and approves the applications for such schemes, a sample of which is presented in Table 6.3. These examples show how, in most cases, traffic management measures are used to accommodate the car and speed the flow of traffic.

Table 6.3 A sample of traffic management schemes in Malta. Source: Traffic Management Directorate, Malta Transport Authority.

- Private / Disability Parking
- Road Humps
- Pedestrian Crossings
- Traffic Lights Systems
- Regulatory Prohibitory/Mandatory/Directional Signs
- Warning Signs
- Loading Bay/Signs
- Roundabout with Signage
- Traffic Mirrors
- Pedestrianisation Projects
- Traffic Improvement Schemes

Large-scale pedestrianisation projects have not been successfully adopted other than in Valletta's main shopping street. Pedestrianisation outside the city has been restricted to narrow roads which anyhow cannot physically accommodate traffic. Many local councils have introduced one-way systems to restrict traffic to one lane and dedicate the other to parking, in which case no benefit to the pedestrian is achieved. The adoption of traffic management schemes has also been very singular and fragmented. Very few schemes have pushed forward the concept of improving the street environment for all users. They are generally based on local needs rather than forming part of a long-term plan. And, because no monitoring is ever carried out in areas which have experienced the implementation of a traffic management scheme, it is always very difficult to assess their impacts.

As argued in Chapter 4, effective pricing aimed at internalising the true transport costs is possibly the best tool with which to regulate car use. Despite this, the relatively small charge currently applicable to drive into the main employment centre of Valletta is not effective and does not limit the number of cars on the network. A revision of the present charging scheme for Valletta is therefore suggested in this study and will be discussed later, in the second part of this chapter.

Policy priority 4 relates to the need for integrating land use and transport planning. The unsuccessful attempt to codify this policy, found in the current Structure Plan suggests how difficult it is to actually implement. However, the lack of an administrative body responsible for transport planning might, over the past decade, have influenced the adoption of this policy. Measures to integrate land use and transport planning are listed later in Section 6.2.

Policy priority 5 focuses on the need for research, monitoring and enforcement. It is imperative that research is conducted in order to enhance understanding of travel demand, public opinion of transport services and impacts of transport on the quality of life of the population. The current land

use distribution and increasing private mobility has resulted in complex travel patterns. These patterns must be identified first to assess the current situation. Integrating research also with other organisations, authorities and NGOs will widen the area of study to include all elements influencing land transport.

The monitoring and enforcement of regulation is critical for successful implementation of any policy: lack of monitoring risks damaging both public acceptance and government attitudes towards the future adoption of further transport policies. In Malta, a change in approach to implementing policy is necessary for it to include monitoring and enforcement. The Malta Transport Authority already has the legal powers, among other things, to:

- enforce public transport operations,
- oversee road construction standards,
- oversee the design and implementation of traffic management schemes,
- ensure safety for any type of passenger and goods transport on the roads.

A further use of these measures, as suggested in Policy Priority 5, is for education and awareness, such as in the case of explaining transport impacts on health. This also links to the measures suggested for voluntary behavioural changes in Policy Priority 1. Without proper research into and monitoring of the various elements of transport behaviour, it is very difficult to use efficient marketing strategies to get people out of their cars and using public transport. With improved access to a wide range of data it is possible to better market the benefits of using public transport. It is also acknowledged, however, that these studies require a certain amount of investment, both financially and in terms of human resources.

6.2 Priorities in a 'sustainable' land transport policy

The transport sector is a highly sensitive arena within the Maltese political life. A Government success has traditionally been defined in terms of how much money was spent on providing for the car, especially road infrastructure. Given short political terms of office and limited funds, governments have been reluctant to invest in projects which do not have an extensive, immediate and positive impact on the electorate. There is, in general, a very short time-span during which unpopular measures can be implemented; in effect the first two years following an election.

Despite the perceptions of politicians and stakeholders, public opinion has been identified as being supportive, overall, of 'sustainable' mobility. Section 4.1.6 of this study showed this support at a European level, mainly for public transport to be a 'sustainable' alternative. Similarly, the results obtained in two public attitude surveys carried out in Malta in December 1989 (published in 1991) and July 1999 show support for such an approach. The results of these surveys are displayed in Table 6.4.

The support for environmentally friendly modes of transport is mirrored in the high percentage of respondents who would use public transport should the service improve. This is equally demonstrated in both the 1989 and 1999 survey results.

The two questions referring to car-free shopping streets and pedestrianisation of village cores show different results. Although in other countries village cores and shopping areas tend to be one and the same thing, this is not the case in Malta. The traditional village cores hardly ever contain significant shopping streets, due to their very narrow roads which can host only small local shops. With the exception of Valletta, shopping areas are wide streets in primary town centres which provide very good access by car and conflict with pedestrian movement. Notably, the results show a 76.0 per cent agreement with

pedestrianisation of village cores, however there is less support (56.0 per cent in 1999) for car-free shopping streets.

Table 6.4 Public Attitude Survey results conducted by the Malta Environment and Planning Authority, December 1989 (published in 1991) and July 1999. Source: Planning Services Division, 1991 and Malta Environment and Planning Authority, 1999.

Statement	Year	Strongly Agree	Agree	No Opinion	Disagree	Strongly Disagree
		Results in percentage				
Main shopping streets should be free of traffic.	1989	30.1	30.1	7.6	23.6	8.0
	1999	23.0	33.0	8.0	20.0	14.0
If bus services are improved, we would make more use of public transport.	1989	40.7	34.9	9.6	10.4	3.4
	1999	49.0	34.0	6.0	6.0	4.0
Bus services can only be improved if bus fares increase	1989	8.3	9.1	8.3	33.5	39.8
Ferry services between the Grand Harbour should be established for commuters as well as tourists.	1989	40.2	32.9	15.6	6.6	4.3
Existing traffic laws must be better enforced.	1989	80.5	14.6	2.4	0.9	0.9
More areas in town centres and village cores should be pedestrianised.	1999	39.0	37.0	6.0	11.0	6.0
There is a need for improved accessibility for pushchairs and wheelchairs even at the expense of car space.	1999	57.0	33.0	4.0	3.0	2.0
Areas like Chadwick Lakes should be traffic free on weekends and public holidays.	1999	49.0	30.0	6.0	9.0	4.0
A bridge should be constructed so as to link Malta, Gozo and Comino.	1999	39.0	18.0	6.0	9.0	27.0

The data presented for Malta are very limited and it is not possible to formulate a strong conclusion on the opinion of the Maltese public as to the adoption of 'sustainable' transport policies. From the Attitude Surveys presented here, there is evidence pointing towards the need for more socially acceptable transport policies, such as improved public transport services, low bus fares and more wheelchair and pedestrian access. In addition to these, the survey results presented by Brog (2000) and Stead (2004) in Chapter 4 also indicate that the public perceives environmentally friendly modes to be the most successful measures to achieve improvements in urban transport.

The policy framework suggested in this study looks at policies in the short and medium term. The next section provides a detailed overview of some of the priority measures: first, the internalisation of the true costs of transport through the revision of the Valletta road charging scheme; second, public transport administrative and network improvements; and third, the integration of land use and transport planning (using as an example workplace travel plans).

6.2.1 Internalising the true costs of transport

The pricing schemes referred to in Policy Priority 3 should be implemented in the light of the discussions in Chapter 4 on estimating and internalising the external costs of transport. Chapter 3 also presented an estimate of costs for transport in Malta based on the various studies carried out in Europe (CE 1999; INFRAS 2000). This section will look at the policy approach of internalising the external costs of transport in Malta and proposing a revised Valletta charging scheme, as a financial restraint rather than solely a revenue raising device.

The policy to introduce effective pricing has not been adopted extensively throughout Europe. The efforts of the European Commission at institutionalising effective pricing have been weak, initially by not providing a framework from which to calculate these external costs. Various attempts,

supported by European funding, have been made to measure some of the external costs (Section 4.2.1). To date, however, there is no accepted methodology which measures all the external costs of transport.

The price at which motorists will not be ready to use their cars is very difficult to calculate and might have social repercussions (such as social exclusion). Therefore, whether the internalisation of costs is a 'sustainable' tool in the long term is open to debate.

Despite this, internalisation policies are probably a less unsustainable measure than the fiscal measures applied to regulate private car use in Malta to date. As already discussed in Chapter 3, the Government in Malta has already implemented some fiscal measures to tax private car use (such as fuel tax). There is, however, a lack of traffic restraint charges which, in a small island like Malta, might have an overall traffic reduction effect, even if only introduced in a small but very busy area like the Valletta peninsula.

Being a car-dependent society, with private mobility forming an important facilitator of Maltese society, it is very difficult to envisage future implementation of measures aimed at internalising the full costs of transport, mostly because of political unwillingness. Also, accurate costs of transport cannot be fully measured. The applicability of economic models used for larger countries is limited, as socio-environmental situations are very different. In addition to this, Malta has to start by introducing some basic charges, such as for parking, particularly in high-land-value areas such as the streets of Valletta. A strong political will is required, but the benefits, at least in theory, will be some form of restraint on the increasingly mobility whilst providing the much-needed revenue to improve all transport infrastructure; roads, public transport and pedestrian areas.

6.2.1.1 Revision of the Valletta charging scheme

In an attempt to internalise some of the transport costs and introduce a form of car use restraint, a revision of the current Valletta charging scheme is proposed in this section. Section 3.2.1 presented an overview of the current charging scheme. The walled city lies on a peninsula and access to it is limited to three entry points (See Figure 6.1). Entrance to the city is permitted upon payment of a LM20 (€46) annual fee and a V printed on the license disc attached to the windscreen of the car. Residents are waived the annual fee upon providing proof of a Valletta home address. The number of cars licensed to drive within Valletta extends to 21 per cent of the total vehicle fleet; 54,008 vehicles permitted to circulate in an area of less than a square kilometre, even though not all vehicles with a permit enter Valletta on any given day (traffic volume surveys conducted by the Malta Environment and Planning Authority show the approximately 35,000 vehicles enter the peninsula).

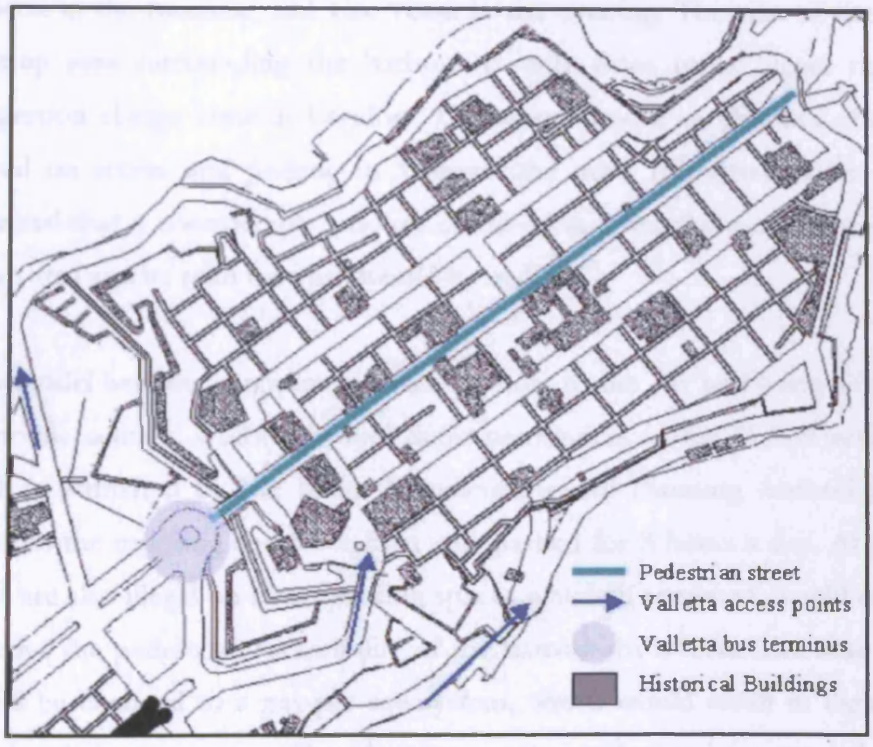
The LM20 charge works out at just over 5 cents (€0.12) a day for a daily commuter. This minimal fee does not act as a deterrent for the many commuters who drive into the city every day. Within the historical and architectural context of the city there are three main reasons why Valletta has a very small traffic capacity: narrow streets, lack of parking areas and the pedestrianisation of the main street, Republic Street (Figure 6.1).

The Maltese motorist has, over the years, absorbed any cost increase related to car use, such as fuel price increases, introduction of roadworthiness testing and the V-licence. A key question is whether this would continue to be the case if the annual LM20 charge were changed and/or increased? The main objectives of a road charging scheme are to:

- internalise some of the external costs of transport, thus introducing the polluter-pays principle;
- reduce motor traffic by providing fiscal disincentives; and

- generate funds for transport infrastructure expenditure, both road and public transport.

Figure 6.1 Valletta access points, pedestrian areas and bus terminus. Drawn by the author.



Currently the income generated from the Valletta scheme is not directly utilised by the Malta Transport Authority for transport infrastructure improvements, such as new public transport services or construction of bus and cycle lanes or pedestrian areas. The revenues go into a consolidated fund where they are then re-distributed by central government in the annual Budget.

The revised Valletta scheme could follow different models of operation, like, for example, the London model of monitoring use of the streets within a specified zone. In Valletta's case this would be combined with the introduction of a parking fee, as parking is currently free within the city walls. This would not

only increase the 'entrance' fee but also increase the efficiency of parking space in the city. The advantage of this scheme in Malta is that it would not have the traffic and congestion displacement concerns of 'greater London' (although in practice these have not been realised). Most peak traffic in Malta is towards Valletta in the morning and vice versa in the evening. The size of the whole built-up area surrounding the harbour is only three times bigger than the congestion charge zone in London. Therefore, should an effective charge be placed on access and parking in Valletta (the main trip attractor), it can be expected that a considerable amount of car-commuting from across the entire urban area and its road network would be avoided.

This model benefits shoppers, who are visitors to the city and bring with them economic activity, whilst it would deter commuters (some 11,000 vehicles in total as estimated by the Malta Environment and Planning Authority), who arrive in the morning and leave their cars parked for 8 hours a day. At present there are also illegal on-street parking spaces which, if removed, would certainly improve the pedestrian accessibility of the narrow city streets. The road charge would be changed to a pay-per-use system, which would result in higher fees for the daily commuter. The charging zone could also be extended to the adjacent town of Floriana, which is another major employment centre with a large number of commuters (an estimated 8,000 vehicles) and an even higher population density than Valletta. This would achieve the objectives of reducing traffic on the network during the peak hours and improving the city environment for workers, residents and visitors.

It is not the remit of this study to determine which technology the charging scheme should use. However, given the geography of the area, and the limited accessibility, it should not entail a large investment in infrastructure and monitoring technology, even because the technology is nowadays available and have been tried and tested elsewhere. It should be part of government policy to maximise the efficiency of this fiscal measure (once it is available), introduce a charge for parking on the road and restrain car use. Additional fiscal

disincentives such as on-street parking charges, and car use restraint measures such as the reduction of on-street parking in town centres, would further support the overall Government objective of reducing private mobility.

6.2.2 Improving public transport services

The present public transport system is based on some 90 routes travelling mostly to and from Valletta on a circular basis. This system developed along the lines of urban sprawl as they occurred over time, but not necessarily following the travel demands and needs of the population. With the current decline in bus patronage, increase in subsidy, and increase in the levels of car traffic, it is important for bus services to provide an efficient alternative to the car. The present system has some strengths, which in planning for an improved service cannot be ignored. It is also relevant to identify the weaknesses and avoid them in the proposed service. Table 6.5 lists the strengths and weaknesses of the current public transport service. These were identified at a meeting held recently in Malta among public transport operators, the Malta Transport Authority and bus users.

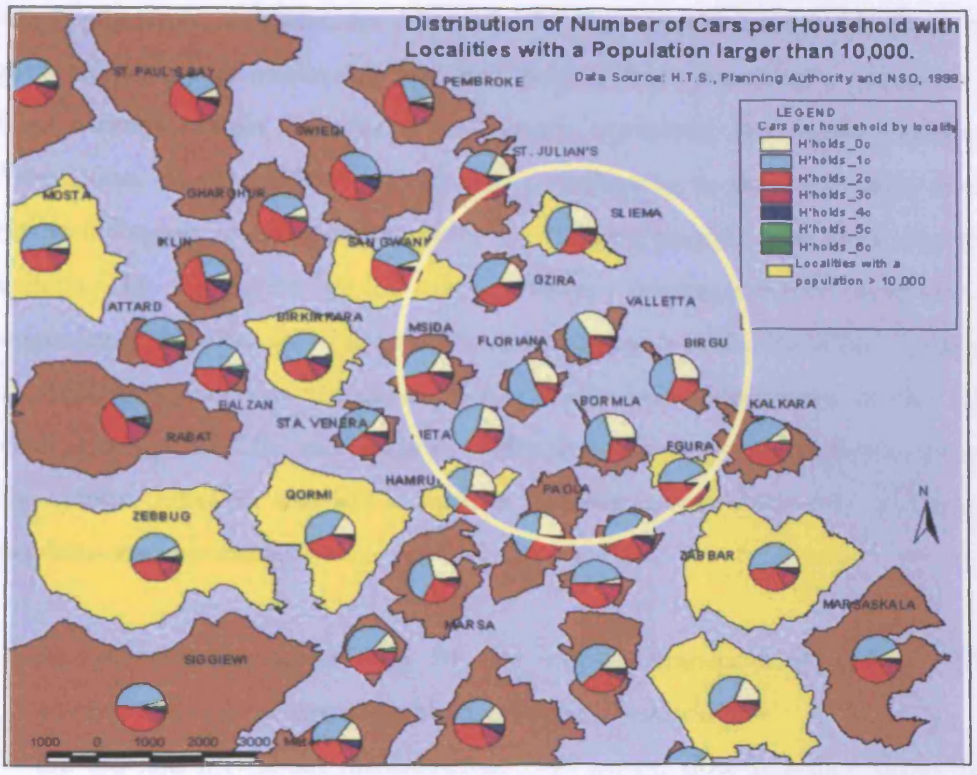
The strengths in the system are widely acknowledged by the locals, the operators and the authorities. Most prominent are the low fares which passengers pay to use the service and the percentage of the population living within a short walking distance of a bus stop. The Household Travel Surveys conducted by the Malta Environment and Planning Authority show that the percentage of all households living within 5 minutes walk has dropped slightly from 75% in 1989 to 73% in 1998, but remains relatively high (Malta Environment and Planning Authority 2001). There is also another issue related to the geographic socio-economic structure of the Maltese population; the large percentage of households without access to a private car within the Inner Harbour Region (Figure 6.2). This concentration could be attributed to the lower standard of living in the area or to the very good service provided by public transport, where all routes converge towards Valletta, increasing the bus

frequency and choice of destinations. There are also other benefits related to the ease of use of the bus network by tourists. The present system, with all services originating from the main hub of Valletta is easy to use, and tourists can explore the island by starting each trip from the same terminus.

Table 6.5 Strengths and weakness of the present bus service in Malta.

Strengths	Weaknesses
The particularly low fares for single journeys	Valletta bus terminus is old and badly managed
The use of expensive passes by tourists, generating extra money from the occasional user	Destinations other than Valletta are not well provided for
Bus stop accessibility is very high	The owners are guaranteed an earning and therefore have no incentive to improve the service
Access to Valletta is very good	There is a lack of public information on bus schedules and time tables
There are a large number of social services still running on the network	The buses run till 11 o'clock at night with limited hours of operation (night services operate only from one location)
The average length of a trip is 10km	Boarding times are slow
The replacement of old buses with more comfortable new buses	Over the years there has been inflexibility to changes in demand
The low costs of garaging and maintenance of buses by owner/drivers	Lack of control and enforcement leading to missing buses and route fragmentation
Relatively high frequency	Over-bussing during off-peak hours and over-crowding during peak hours
A simple zoning system to calculate the fares	Lack of transparency in financial operations and uncontrollable rise in subsidy
Route information is available from bus drivers and other outlets	Poor customer services related to driver attitude and discipline
	No bus priority enforced

Figure 6.2 Car ownership in the localities surrounding the Grand Harbour. Drawn by the author.



The Valletta bus terminus and radial network mean that all towns and villages are directly linked with the main city. Also, the distances travelled by bus are low (an average of 10km for each trip). With an average frequency of 15-20 minutes there is a relatively good level of service and the zoning system, introduced in 1995 to replace the fare stage system, makes ticketing and fare information much easier to understand. Above all, within the present system, there is a high percentage of social-service routes as most public transport runs at a loss. The introduction of new buses has also improved the infrastructure, even though these are replacing the 'lovely' old buses, much loved by visitors to the island.

However, the benefits outlined above have not been reflected in the patronage. Figures show a constant decline over the past ten years, with the result that a large percentage of routes are unprofitable. As a result the subsidy from the government had to increase, given that from 1995 it provided a guarantee of fixed earnings to the scheduled bus service operators, the Public Transport Association. The present system is also contributing to the congestion in the Harbour Region, as most bus services are running on the same roads, towards Valletta. This congestion has led to an inefficient system, in which buses can no longer meet the time schedules set for their operation. The inability to provide an efficient service has led users to search for other alternative modes. The result is one part of the explanation of the dramatic increase in private car use. The system therefore also has a number of weaknesses (Table 6.5). The major problems are summarized as:

- the present monopoly held by the Public Transport Association (the administrative structure of public transport operations);
- the old and inefficient infrastructure (old buses, slow boarding times, bus termini, inflexible routes); and
- the quality of customer service (driver attitude, lack of passenger information at bus stops and termini).

The government subsidy is seen as a disincentive for operators to improve their services. In order to tackle the problems outlined above and in Chapter 3, proposals are made for the bus operations and network of public transport services in the following sections.

6.2.2.1 A new model of bus operations in Malta

As suggested in Chapter 4, there is a strong correlation between the levels of patronage of a service and the administrative structures behind the service

operation. The present Public Transport Association acts as a cartel and pressures government through industrial action and threats of political repercussions. This is made possible because of the monopoly the Association has over the operation of the scheduled bus services in Malta.

Apart from the necessary restructuring of the network, proposed in the next section, this study also looks at the current administrative structures and attempts to clarify the roles of both regulator and operator, eventually to conclude with a model by which bus operations in Malta could achieve 'sustainability'. The most important elements for improving public transport patronage were identified in the discussion in Chapter 4 and are:

- extensive coverage, co-ordinated interchange and better passenger information;
- route reliability and efficiency;
- through ticketing;
- some form of competition to encourage initiative by operator; and
- centrally organised operations to ensure continuity of services and network coverage (particularly easy for Malta because of the relatively small network area).

The administrative options to deliver the above elements for a more sustainable public transport service in Malta are discussed below.

- **Improved Status Quo** represents the present system with some improvements in the level of services through reduction and redistribution of routes, but with no overall changes to the current regulator/operator system. The Public Transport Directorate within the Malta Transport Authority, and the Association informally discuss routes, fares and detailed operations without a standard procedure for registering, approving and publishing routes and timetables. This leads to a lack of information on what services are on offer for both the regulator and the general public.

Within this system it is not clear what the role of the Malta Transport Authority is, as without proper network information it is also very difficult for the Authority to enforce agreements and regulations.

The only advantage to adopting the first option - of improving the status quo - is probably the ease of its implementation. However, this approach has been adopted in the past; with minor changes to the system that do not tackle the fundamental issues of up-to-date route and timetable information, major initiatives for improvement and dependence on subsidy. Without very strict enforcement and better legal structures to penalise operators, there is little scope for regulating the service.

- In an attempt to break the cartel, a **regionalised status quo** is also considered. With this system, the network operations and their respective administration would be divided between regions, but still largely controlled by the Malta Transport Authority and possibly by the Public Transport Association. The monopoly would remain, so would the current practices and route management. This would introduce no significant changes to the performance of the public transport services, except maybe the introduction of illegal competition between regions. This would be expected since particular regions of Malta (for example the north harbours) are a major tourist location and therefore generate more income. The Association would have problems assigning its members to 'poor' or 'rich' areas. In addition, this might jeopardise the cross-subsidisation which at the moment occurs between profitable and non-profitable routes.

- A **single Maltese company** would replace the existing Association. All current owners would become shareholders and bus licences (operator's licences) would be transferred to the company, along with the responsibility for operations. The operating costs would increase in this option as,

currently, each bus owner houses and maintains his own buses. The company would have to purchase all the buses, introduce depot infrastructure and employ or contract maintenance staff. The transition to this system would be extremely difficult, not only because of the heavy initial investment cost required but also because, at present, a bus licence is inherited from one generation of bus drivers to another. This would be resisted from current bus owners who view their bus licences as a major asset.

- The **service group 'net cost' tendering** is possibly the most advantageous. Despite the possible rise in the cost of tendering, the level of service would improve because a service contract, regulated by the Malta Transport Authority, would dictate to the operators how the service should be delivered, and improved efficiency would result from the operators' drive to perform. There is also the possibility of introducing a performance reward regime for the best operator. A strict contract would allow the regulator to make sure that an efficient service was delivered. It is envisaged that such a system would not be difficult to implement in Malta, particularly if there was strong political will to introduce controlled competition in the sector. Unfortunately, in the absence of political backing, the introduction of the tendering process might be boycotted and there is always the risk that the Association would act as the only operator, tendering for all the services. According to a 1995 agreement, the current Association has the right of first refusal on all scheduled services operating in Malta.

- A further possibility is to **offer the whole network in one tender**, allowing in the process overseas operators to bid as well. This would eliminate the problem of the Association's monopoly. Even if this would be quite easy to adopt, there is too much uncertainty about what would happen to the present 400 bus owners and their buses should an overseas company take

over public transport services. In any case, this would require a political decision which would be very difficult to make, and no politician would jeopardise the income of 400 families if the current bus driver/owners were to end up unemployed.

- The idea of splitting the operations between **various public transport companies** has some serious deficiencies. Costs would obviously increase because of loss of economies of scale, whilst the more critical problem would be the size of the market, which is too small to sustain two or more companies running services which are less than 10 kilometres in length. There might also be a loss of efficiency as network coverage is reduced to make it more viable.

- **Deregulation** is also another option for consideration. One can conclude however that, from the UK experience discussed in Chapter 4, the option of deregulation would in time increase subsidy, decrease the level of service and increase on-the-road competition on a network which is already very congested and arguably in need of integrated planning.

In conclusion, it is acknowledged that a change in the administrative structures of public transport in Malta is required. The above discussion was based on earlier examples from other countries, examined in Chapter 4. It also points to service tendering as the solution to the provision of a better public transport service. Using the structures identified in the service contract, the roles of both operator and regulator are clearly defined. The quality of service, as an important element of successful public transport (Mees 2000), could be achieved through letting contracts for tender with conditions on fare structures, public information, cleanliness, safety and stated hours of operation. These would be overseen by the regulating authority and enforced through legal

measures, should the operator default. In addition, network planning integration and interchange, listed above as one of the most important elements of service quality, would reduce redundancy, which is currently very high in Malta.

The move towards competitive tendering would also possibly pave the way to implementing proposals being still discussed by the European Commission, should they become law. This initiative concerns the awarding of, and the compulsory competitive tendering for, public service concessions, including public transport. The current public procurement directives have not led to widespread use of competitive tendering in the field of public transport. However, the Commission has proposed a new regulation (COM(2002)107) that would require the majority of urban public transport services to be opened to competition either through free competition or controlled competition (European Commission 2002b). This choice would be left to the authority in charge, but the aim of the Commission is to improve the quality of public transport services by setting quality requirements. The European Parliament completed its first reading of this proposal in November 2001 and responding to this the European Commission adopted a new proposal in 2002 but has yet to reach a common position. Discussions on this proposal started late in 2004.

Competitive tendering refers to the awarding of an exclusive right to operate a route, or a network of routes, to an operator (or possibly a consortium) following a competitive process. Along with, or instead of, an exclusive right, the authority may also grant subsidises to the successful operator in compensation for the fulfilment of public service requirements (ICLEI 2003). Should the European Commission enact a directive concerning compulsory competitive tendering, this would require, for several Member States, a paradigm shift with respect to the awarding of public service concessions.

6.2.2.2 A new structure of bus services for Malta

Based on the studies of travel demand (the Household Travel Survey) and the location of shopping, educational and employment centres, the proposed network structure is re-designed to reduce the pressure on the Valletta main bus terminus, and is based on the concept of regional interchanges, or hubs. The structure prepared for this study is a draft network of how the services could be mapped to improve the overall performance of the network. Using this proposal, interviewees were approached to comment on the advantages and problems which they identified in this new structure.

Analysis of travel demand is based on the Household Travel Survey results, which show the location of sites generating a large number of trips. Because of limited resources, and the nature of this proposal, only three trip purposes were identified; employment, education and shopping trips. The distribution is shown in Figure 6.3 and the origin-destination matrices are attached in Appendix VII. It is evident that there is a different distribution for each purpose, with some emphasis on the north central parts of the island. The locations of the interchanges were selected using the following criteria:

- the population total in the locality was high (with the exception of Valletta which has a small resident population);
- the locality attracts a large number of employment, education and shopping trips;
- the existence of bus terminus infrastructure.

Figure 6.3 Distribution of trips in Malta, by purpose. Drawn by the author. Data Source: Malta Environment and Planning Authority, 1998.

The criteria are quantified in Table 6.6. The low total percentage of trips across the table suggests a highly-dispersed trip pattern around the island, with the exception of shopping trips, which show a tendency to concentrate around the major towns.

Table 6.6 Quantified criteria for hub selection with percentage of total. Data Sources: National Statistics Office, 2001a; Malta Environment and Planning Authority, 1998. Compiled by the author.

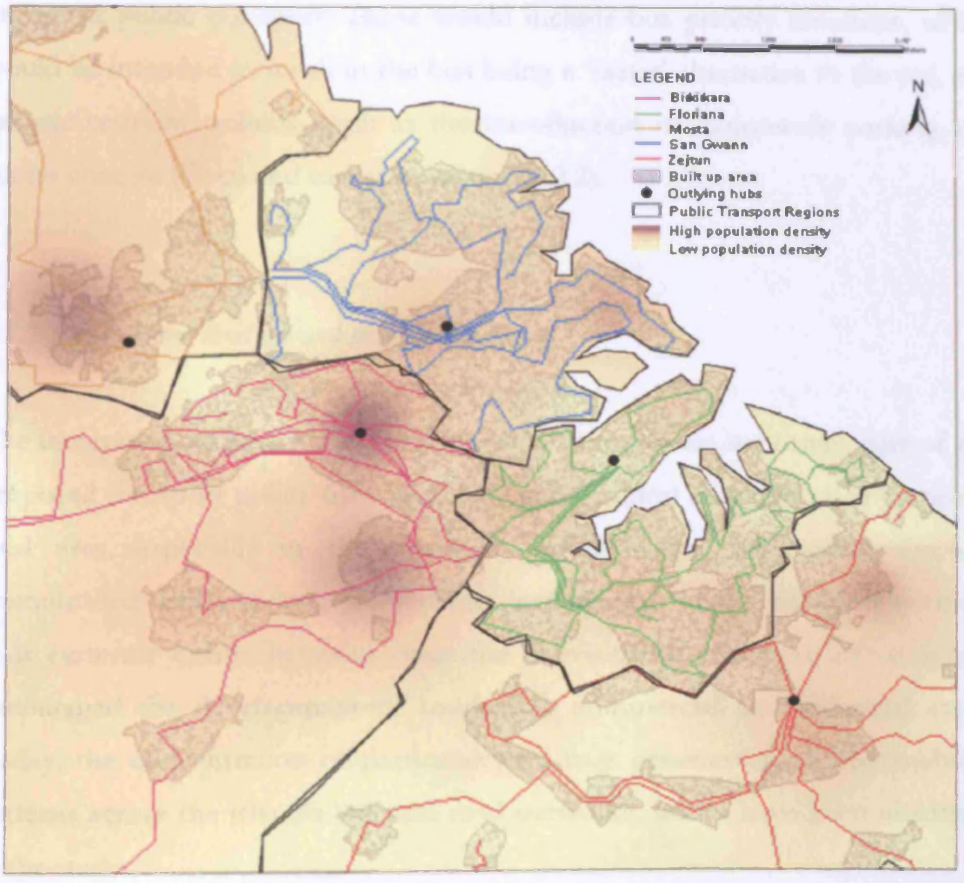
	Valletta	San Gwann	Mosta	Birkirkara	Zejtun	Total
Population	7,184 *(2%)*	11,985 *(4%)*	16,629 *(5%)*	21,246 *(6%)*	11,285 *(3%)*	- *(20%)*
Employment trips	11,416 *(9%)*	3,790 *(3%)*	3,422 *(3%)*	7,547 *(6%)*	3,760 *(3%)*	- *(24%)*
Education trips	1,435 *(3%)*	1,024 *(2%)*	1,612 *(3%)*	3,376 *(6%)*	1,588 *(3%)*	- *(19%)*
Shopping trips	9,336 *(18%)*	1,375 *(3%)*	2,643 *(5%)*	6,448 *(13%)*	1,192 *(2%)*	- *(41%)*
Terminus availability	Yes	No	No	Yes	Yes	N/a

Following the selection of the outlying interchanges, bus routes were mapped according to existing roads to and from all localities. The destinations of such routes were changed from Valletta to the nearest outlying "hub". This shortens the actual trip making it less prone to be delayed by congestion in the Inner Harbour Region, and on the approach to Valletta. Also, the pressure of all bus routes converging onto Valletta has been reduced to only ten (including any direct routes which would be deemed necessary). These routes would be high frequency due to their short distance and would cope with the traffic entering Valletta from the other interchanges. The structure of the proposed system is explained in Figure 6.4. Each outlying interchange is inter-connected by a direct (non-stop) connection. These direct services, between main interchanges, are not shown on the figure. This proposal also excludes any direct bus services which exist today servicing tourist areas, and the night bus services, as these would be incorporated in the day service which would run also at night (with the possibility of reduced frequency during the night and during weekends).

Changes to the actual roads serviced by the present system were kept to the minimum to minimise change and disruption for the existing users and to maintain the relatively high accessibility of public transport. Extensions to the route were made where new housing developments have been built and where

the present route did not cover the whole built-up area within the locality equally.

Figure 6.4 Detail of the urban agglomeration around Valletta with the underlying population density and proposed bus system divided into five regions. Drawn by the author.



Further analysis of the network would then require building an economic model whereby all variables influencing public transport operations, including cost of operations and patronage, could be assessed, both for the present and proposed network structures. The assumptions suggested for this proposal are based on geography and travel demand as surveyed in 1998. More up-to-date information

would be required to identify today's travel patterns and identify the present and potential bus users.

In addition to the proposals made in this section for restructuring both the administrative structures and the network of services, a number of complementary measures would ensure better return on investment in improved public transport. These would include bus priority measures, which would be intended to result in the bus being a 'faster' alternative to the car, and car use restraint policies, such as the introduction of nationwide parking and access charges (discussed earlier in section 6.2.2).

6.2.3 Integration of land use and transport planning

The integration of land use and transport planning is an important part of the proposed transport policy for Malta. The geographical distribution of particular land uses, especially in the post-war period when Malta went through uncontrolled urban sprawl, marked the development of the transport network as it currently exists. In some cases the provision of transport infrastructure encouraged the development of residential, commercial and industrial areas. Today, the concentration of particular land uses generates particular mobility patterns across the island's bus and road networks, which have been identified in the study.

The concentration of the urban area around the Grand Harbour makes up only 24 per cent of the total land area of the islands. This accentuates the problems of high land use and traffic densities. Large developments, such as the development of Manoel Island and Tigne Point in Sliema and the New Hospital in Msida, are among the few projects which will generate a large number of trips. Therefore integration of land use and transport planning is essential.

The first aim of this policy should be to reduce the need to travel. Over the years, not much effort has gone into promoting mixed land uses. Approval of development applications was not based on accessibility, and public transport services were not coordinated to provide for areas of high land use concentration. Classic cases of development/transport conflicts were the opening of food supermarkets at locations that required the use of private cars and the location of showrooms on major traffic bypasses.

There are three principles to be followed in this case:

- increase the accessibility of developments for pedestrian, cycle and public transport trips;
- plan and build facilities which increase the relative attraction of environment-friendly modes of travel;
- restrict the development of transport facilities which have the opposite effect; and
- establish hubs at large scale developments and stimulate mixed land uses.

The major land uses and activities should follow the policy measures outlined in Table 6.7.

In Malta, however, as described in Chapter 2, land use planning falls under a different authority and has a separate ministerial agenda from transport. With the setting up of a separate transport authority, the problem of integration is far from being resolved. It is hoped that, by overcoming the political barriers and the problems associated with ownership of policy, integration can occur between the Malta Transport Authority and the Malta Environment and Planning Authority.

Table 6.7 Policies directed towards reducing the need to travel. Source: Adapted from Department of Environment and Department of Transport, 1995.

Housing development should be located wherever possible, so as to provide a choice of means to travel to other facilities	Provide for housing development in central locations within existing urban areas or rural centers, including on vacant, derelict or underused land, or through conversion, improvement or redevelopment of existing stock; Concentrate higher-density residential development near public transport corridors and close to local facilities; Set standards to maintain existing densities and where appropriate increase them; Juxtapose employment and residential use, where feasible, through mixed-use development and by releasing adequate housing land on suitable sites within central urban areas to make it easier for people to live near their work.
Concentration of employment and other activities attracting significant number of trips (such as shopping and leisure) in urban centers tends to increase the potential for use of public transport and reduce dependence on the private car	Aim to move towards a better balance between employment and population, both within existing urban and rural areas, in order to enable people to live near their work; Focus the opportunities for development of travel-intensive uses which are well served by public transport; Avoid major developments in locations not well served by public transport or otherwise readily accessible to a significant local residential workforce; Allocate sites unlikely to be served by public transport solely for uses which are not employment or travel intensive; Facilitate home working and the provision of facilities for small groups of employees to work together locally.
Freight transport should be restricted to parts of the network where it is possible to move large vehicles	Designate sites for distribution and warehousing, particularly of bulk goods, which, although avoiding direct access onto the trunk road network, are both readily accessible to it and served or with the potential to be served from harbours; Maximize the proportion of materials moved by road, through discussion with extractors and transport operators through appropriate planning obligations and conditions of permission; Designate routes along the network which should be used by vehicles carrying bulk goods or construction material (heavy vehicles) to minimize the impact on the road network and plan for their future disposal to be closer to the source.

Table 6.7 *cont.*

Retailing should seek to promote the vitality and livability of existing urban centers	Maintain and revitalize existing central shopping centers by enabling development to take place there and by policies which improve the quality and competitiveness of those areas; Encourage local convenience shopping by promoting the location of facilities in local centers and ensuring such areas are attractive and readily accessible on foot or by bicycle; Where suitable central locations are not available for larger retail development, seek edge-of-center sites, close enough to be readily accessible by foot from the center and which can be serviced by a variety of transport modes; Avoid sporadic siting of comparison goods shopping units out of centers and along road corridors; Provide for both local shopping and residential uses in large new developments where feasible.
Leisure, Tourism and Recreation areas should ensure that major new attractions are readily accessible by a range of means of transport and where possible use sites in existing urban areas	Concentrate facilities in town centers and other locations well served by public transport; Provide town center locations for cinemas and theatre to give vitality in the evenings; Maintain and encourage the provision of local leisure and entertainment facilities; Make provision for attractive and accessible local play areas, public open spaces and other recreational facilities.

A short-term measure which could ensure a reduction in the need to travel and better manage the travel needs of the population is the introduction of Workplace Travel Plans. The next section gives a brief overview of how these could be implemented in Malta.

6.2.3.1 Introducing Workplace Travel Plans

Employment is the main travel purpose which occurs daily and causes the traffic to peak at certain times of the day. Because of its small size, Malta has identifiable employment centres. Figure 6.3 showed the distribution of these employment destinations. These localities are related to particularly large employers (for example the Malta International Airport in Luqa) or a collection of employment opportunities (such as industrial estates, administrative or tourist centres). Travel plan guidelines would need to be drawn up by the Malta Transport Authority, based on the identification of these major employers and the impact they have on the travel patterns around the island. A number of measures necessary in a travel plan are suggested in Table 6.8.

Table 6.8 Travel Plan measures. Source: Rye, 2002.

Mode	**Measure**
Overall for whole plan	Travel co-ordinator Promotion and publicity Implementation process
Walking	Improved lighting and walkways Incentives for walkers Crossings in/adjacent to site
Cycling	Changing/shower facilities Bicycle loan scheme Good, secure parking provision Discount purchases of cycles and equipment
Public Transport	Provision of Public Transport information at workplace Discounted season tickets, paid by operator Liaise with local operators to operate new services Pay for new services Pay for subsidies for fares on existing bus services
Car share	Staff travel survey to identify potential sharers Priority parking spaces for car sharers Guaranteed ride home (taxi)
Parking	Reduce parking through permits Ration parking through permit allocation Charge for parking
New conditions for employment	Flexi-time Telecommuting/teleworking Company car initiative altered to include car-sharing

It is important to engage employers in the overall policy to reduce car use and shift to more environmentally friendly transport. The government might even impose travel plans on particular employers which are major contributors to car-based traffic. Incentives could be introduced as part of the policy to encourage the adoption of travel plans, such as tax rebates, provision of infrastructure or a reward system based on performance. This is the reason why this measure is given priority in this study as one which, apart from involving the population at large, would have an impact on the daily traffic on the roads.

6.3 Conclusions

This chapter has proposed a national land transport policy which aims to introduce the concept of 'sustainable' mobility in Malta. With the impending EU transport reforms and Malta's accession, there is a need to look at the present structures and adopt new approaches to planning and managing transport demand. Some of the measures might be viewed as innovative for this small island as the part *laissez-faire* attitude and part politicisation of transport has led to a society which is increasingly dependent on the car. However, the transitional period Malta has embarked upon to be part of the EU has proved to be a good catalyst for change.

7.0 Policy analysis and the problems of implementation

This chapter deals with the fourth objective in the study, which aims to (i) analyse policy to date and (ii) identify difficulties in achieving the policy framework proposed in Chapter 6. The methodology used to analyse transport policy was discussed in Section 5.2, but, to recap, is an adaptation of the sociological institutional approach of March and Olsen (1976) and later of Vigar et al. (2000). The focus of the analysis is on the three organising principles of analysing policy networks, arenas and discourse.

Following the transport policy analysis, this chapter will conclude by identifying the possible difficulties of achieving the proposed policy framework.

7.1 Transport Policy Networks and Arenas

7.1.1 Policy Networks

In trying to understand the transport policy networks, it is necessary to explain the changing roles of organisations in transport planning and the current conflicts within these networks. Section 2.2 explained the development of institutional structures for land transport in Malta. Prior to the setting up of the Malta Transport Authority, responsibilities were fragmented between various government departments and authorities. This fragmentation primarily led to incoherent policy making, in addition to leaving the country without a regulatory authority to oversee the many inter-related aspects of land transport.

The technical reports supporting the Structure Plan for the Maltese Islands (1992) had clearly identified the lack of an institutional framework at the time, for land transport planning, regulation and policy making. It was pointed out

that "*there does not appear to be an aim for transport in Malta*" and that there was "*no single authority in overall control of transport, no strategy as to the relative importance of different means of travel, and consequently no conscious decisions as to the level of resources allocated to different modes of transport*" (Planning Services Division 1990). It was concluded that transport policies needed to be integrated into other topic plans and that such policies would need to be related to land use and patterns of economic activity, and must also be realistic in terms of resource availability. The Structure Plan therefore proposed institutional "*links between those who plan, construct, maintain, manage and finance the roads; those who regulate and operate public transport; those who manage and enforce traffic and parking legislation; and those with overall responsibility for overall development planning*" (Planning Services Division 1992). The Transport Planning Unit, set up within the Planning Authority, was intended to create a transport function in order to facilitate links between the main stake holders: namely the Ministry for Development of Infrastructure, the Public Transport Authority and the Police. The links between these three stakeholders were intended to ensure that all relevant transport and traffic matters were fully integrated.

The co-ordination never fully materialised. The main reason for this was that, during the inception period of the Structure Plan (1990-1992), parallel and uncoordinated institutional changes were taking place in the land transport sector. Up until 1992 land use planning, road planning and design, and public transport regulation were within the same ministerial portfolio (Ministry for Development of Infrastructure). However, between 1992 and 1994, there were a number of cabinet reshuffles and a new transport ministry was created. This ministry absorbed the existing bodies responsible for land transport, such as the Roads Department and Public Transport Authority from the Ministry for Development of Infrastructure, and the Traffic Control Board from the Ministry for Home Affairs and Social Development.

The Transport Planning Unit within the Planning Authority therefore assumed the functions of policy making and traffic monitoring, and eventually the role of

reviewing the transport policy in the Structure Plan. This review was being undertaken at the same time that transitional measures to overcome institutional deficiencies or to bridge gaps in traffic and land transport legislation were being implemented. Even though the Ministry for Transport was set up in the mid 1990s, there was no revision of the relevant legal framework defining the functions/responsibilities of the Ministry, and therefore no single authority was created to have integrated control over transport.

This created a situation in which an agency (the Planning Authority) which did not fall under the responsibility of the Transport Ministry had a lot of planning and political power over transport matters. However, the isolation of the Planning Authority and the reluctance of other entities to adopt their strategies created an institutional gap in which policy did not reflect any real institutional will, which at the time only existed within the Structure Plan.

In 2001 the setting up of the Malta Transport Authority addressed this need for a single land transport authority. This authority was assigned the responsibilities for planning and provision of an efficient land transport system, in terms of infrastructure and its regulation, with legal powers to develop the strategies that are required to fulfil its regulatory role and make decisions about the level of resources that are allocated to different modes (Malta Transport Authority Act 2000). The Malta Transport Authority had therefore filled the institutional gap that was identified in the Structure Plan in 1992. According to its remit, the Malta Transport Authority was thus intended to promote high levels of integrated planning and management, moving away from the non-collaborative approach to planning that characterised the 1990s.

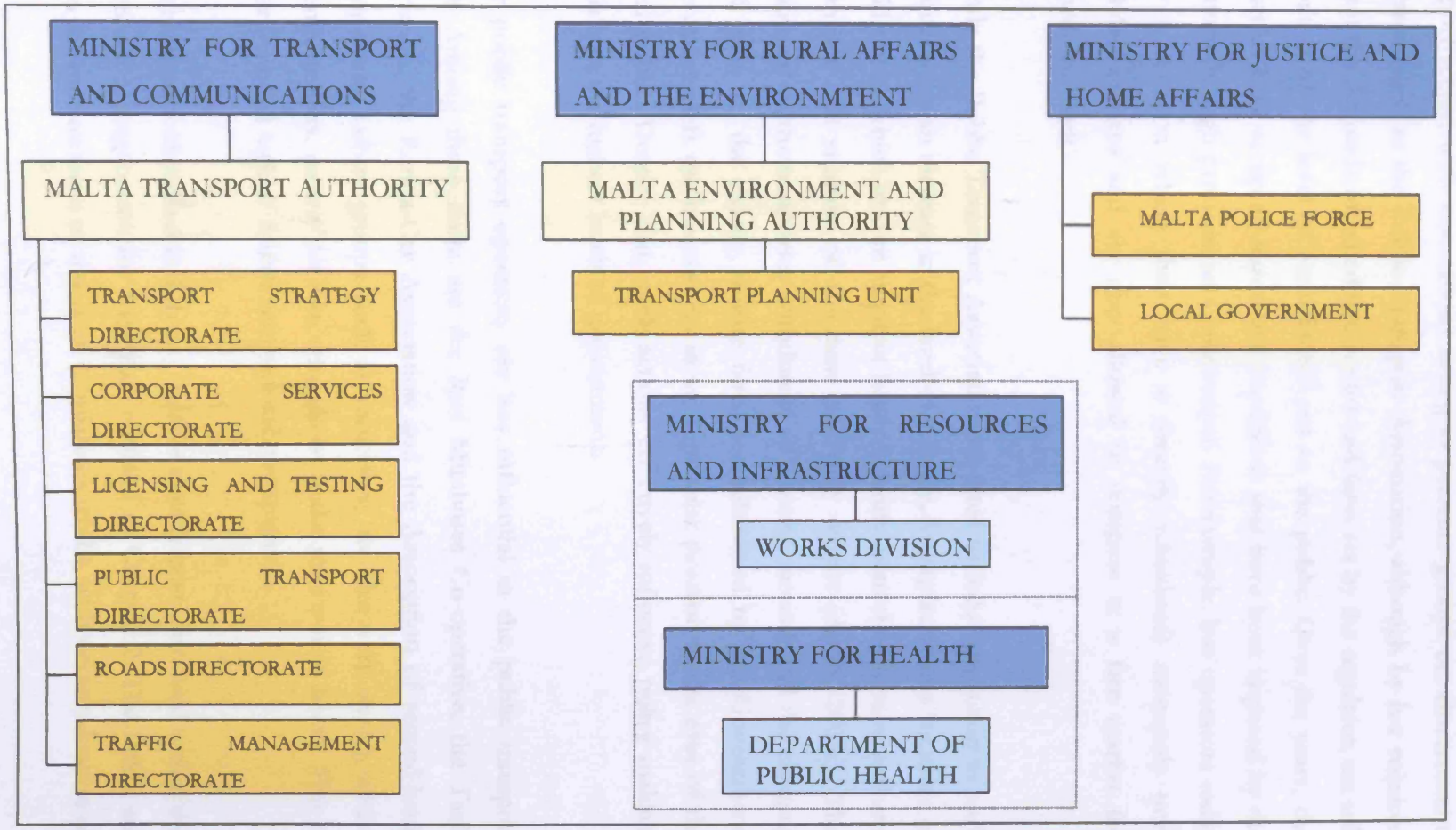
Upon the setting up of the Malta Transport Authority, however, the functions of the Planning Authority to make policy, monitor traffic and review the transport strategy in the Structure Plan were not repealed in law. This created an awkward situation where two authorities had the same legal power to plan for transport. This conflict has still not been resolved, with the Transport Planning

Unit within the Malta Environment and Planning Authority and the Transport Strategy Directorate within the Malta Transport Authority, legally performing the same function.

The policy networks created by such a situation are reflected in Figure 7.1. This figure shows the present day organisational structure of the Malta Transport Authority and other departments (sometimes not less important) which influence the land transport sector. Despite the evident conflicts in these policy networks, there is also the issue that, since most agencies fall under different ministers, policy will also be heavily influenced by the various political agendas and ministerial duties.

In addition to this, land transport is very much a subject of debate in Parliament, increasing the pressure on the authorities to change their policy priorities. Issues that are raised in Parliament are sometimes given priority investigated by the competent authorities and adopted within the transport legislation within a relatively short period of time.

Figure 7.1 Institutional framework for the Ministry for Transport and other Ministries involved in the operations and policy of land transport in Malta. Compiled by author.



The operators also dictate decisions in the land transport sector in Malta. There are monopolies undertaking public service obligations within the public transport sector, with associations acting as pressure groups on Government. Operators such as the Public Transport Association, although by law required to meet the demands of schedules, routes and fares set by the regulator, are still in control of the level of services offered to the public. Over the years, the authorities have accepted terms and conditions that have been imposed by the operators through pressure on Government. For example, bus operators today enjoy a situation where they have a (heavily subsidised) monopoly over scheduled services and are also allowed to compete in a free market for unscheduled work.

Recently the Public Transport Association resorted to industrial action to back up requests for an increase in the level of subsidy, for replacements for more of the old buses, which in turn requires heavy subsidy from the Government and to enhance the security of the new ticketing system (Anon. 2003c). This situation led to the temporary withdrawal of evening services and the charging of full fares to the elderly, whose fares are subsidised by the Government. These actions left the bus owners in an unpopular position in the eyes of the general public. Despite this, such actions effectively influence policy making, especially at the highest levels of government.

Other public transport operators are less influential in the public transport sector. Among these there are the Red Minibuses Co-operative, the Taxis Association, the Rent-a-Car Association and the Association of second-hand car importers. Lobby groups such as motorists, are also very strong, whilst environmentalists, mostly NGOs, struggle to make their voices heard. This is evident from the lack of debate on the local newspapers.

Other ministries identified in Figure 7.1 have already been discussed within the institutional arrangements for transport outlined in Chapter 2. The Police are vital to the enforcement of transport regulations whilst, with decentralisation of

powers, the local councils are increasing their contribution to land transport planning and regulation. This is done not only in terms of enforcement of traffic regulations (by wardens), but also of their involvement in public transport planning and management of infrastructure. Relations with the Ministry for Resources and Infrastructure and the Ministry for Health are more consultative in nature. These links, however, should be strengthened in the consultation processes, should a new transport policy framework for Malta be adopted.

7.1.2 Policy arenas

Despite the seemingly rigid institutional networks that currently exist in the island, there are also a number of arenas that could be defined as significant sites of policy discussion. Some of these arenas are formally constituted, such as working committees between Government agencies, whilst others are informal mechanisms, such as public meetings and workshops.

Over the years there have been a number of *ad hoc* committees set up with particular objectives to implement transport measures. Some of these arenas have been instrumental in changing both policy and practices, and even though they might not be classified within Healey's (1997) 'hard' policy infrastructures, their contribution has been significant. Two examples of working committees will be tackled in this section.

The first example is the Committee for the Creation of Residential and Commercial Parking Schemes set up in 2001 between the Ministry for Justice and Local Councils, the Ministry for Transport and Communications and the Ministry for Rural Affairs and the Environment. Four experts were selected and assigned the task to discuss and write up guidelines for controlled parking. After long discussions on the most politically feasible method of parking control, a time-managed scheme was proposed and approved by Cabinet. Later, this

system was tested in the capital city of Gozo, Victoria. The guidelines were eventually published and other local councils in Malta have followed by the introducing controlled parking in their town centres. The guidelines will also be discussed later in section 7.2.1.

The second example is a working committee set up between the Malta Environment and Planning Authority and the Malta Transport Authority in early 2004. Following the lack of direction from Government on the current legal conflicts between the two authorities, an informal committee was set up, initially between four transport experts, to discuss policy and co-ordinate efforts. This committee sought to bring together the planning functions of transport and land use, using the ideal position held by the Transport Planning Unit within the Malta Environment and Planning Authority, which has primarily a land use planning function.

This informal committee started meeting regularly to discuss long-term strategies for transport, by assessing the land use and environmental impacts of transport proposals and, on the other hand, assessing the impacts of land use development applications on transport. Eventually, other experts where asked to join the committee, including a senior member of the Police Force and as necessary, other experts in the fields of environment protection and land use planning.

It is very difficult to gauge the significance of this committee's work on long-term transport planning because it has been set up relatively recently. The commitment of the members, however, reflects the committee's determination to introduce better practices in transport planning and seek potential integration with land use planning.

Over the past few years there have been efforts to use informal mechanisms such as public meetings, conferences and workshops to discuss transport policy. Two examples of these arenas are the Moving 2000 Conference on Public

Transport organised in 2000 by the then Public Transport Authority and the Workshop on the Future of Transport Policy in Malta organised in 2002 by the author, under the auspices of the University of Malta. In both cases, experts and stakeholders gathered to discuss particular issues related to policy. Despite such events having the disadvantage of excluding some interests, they nonetheless provide an arena in which policy is discussed, and indeed, in some cases the general public is allowed to participate and contribute to the discourse. This will be discussed in detail in the next section.

7.2 Transport policy discourse analysis

In the absence of national policy documents specifically on transport, the policy discourse analysis follows past and current policy networks and arenas and studies the documents which came out of these organisations or situations. Within a very fragmented and dynamic institutional arrangement decisions have been made based on political judgement or in response to social pressures. Some of these decisions are represented in official documents and proposed in formal plans (some legally binding, others not). Some are simply proposals submitted to the government on various issues of land transport, mostly dealing with public transport improvements, the upgrading of the road network and improvements in the overall quality of life (e.g. public health). Within this context, and for the purpose of this study, policy discourse is analysed in order to understand the factors that led to either policy inertia or policy change.

Policy discourse analysis sees policy as a social construct and as a consequence focuses particularly on the language that stakeholders use in their discussions. Hajer (1995) uses policy discourse analysis as a tool for interpreting policy change, recognising that language is a "*system of signification through which actors do not simply describe but create the world*". Discourses are therefore identifiable systems that embody recurring representations and assumptions present in a particular policy field (Vigar 2002).

Discourse analysis for land transport policy in Malta will take a wider approach because of the limited volume of transport policy documents. Many of the documents in this analysis were never formally published or approved by Cabinet. They also reflect the decisions of different organisations. This analysis, however, was essential, as the first such effort to understand the policy history of transport in Malta. Interviews were also carried out to understand the current views of stakeholders, as they shape the policy of the future.

The analysis will look at the early forms of Development Plans that were prepared by the Government from the mid-1960s and eventually replaced, in the late 1980s, by the *Structure Plan for the Maltese Islands.* Work on the Structure Plan started in 1989 and was completed and approved by Parliament as the national land use planning policy tool for Malta in 1992. The Structure Plan also contains a chapter on transport and therefore will also be analysed within the context of this study. A further requirement of the Structure Plan was the establishment of Local Plans (similar to Regional Plans). These, in the absence of any one authority or agency in charge of transport policy, included a transport chapter dictating policies on specific areas around the island. The latest local plans to be issued for public consultation have very detailed policies related to land use and transport but, because they require Cabinet approval, which takes a long time, their relevance once they are adopted is a major issue. Another source of political discourse on land transport is the electoral programmes of the contesting parties since Independence in 1964.

Other policy documents are mostly related to reports and proposals put forward to government over the past decade. Among these are the Public Transport Authority's *The Way Ahead,* which highlights very specifically what the problems within the sector were in 1993, together with ways of improving it, and the *Road Traffic Accidents – Strategic Plan,* prepared in 1996 by the Department of Health Policy and Planning. Even though neither was formally adopted, some of the proposed measures were eventually introduced. The *Roads Master Plan* prepared by road consultants GTZ has still to be implemented.

Priority at present has shifted to the requirements of upgrading the present road network in line with the Trans-European Transport Network. These efforts will be supported by the structural funds provided by the EU in order to improve, or construct the roads proposed in the Transport Infrastructure Needs Assessment.

Other events and reports considered relevant during the course of this research are also included in the analysis. The objective of this section is therefore to identify and analyse discourse, which over time has demonstrated two opposing views. On one hand there is the traditionalist view of the transport sector, which has generally led to policy inertia. On the other, there are documents and individuals which show evidence of shifting towards a new discourse of sustainability and policy change.

7.2.1 Policy discourse in literature

Following the Second World War, **Development Plans for the Maltese Islands** were published every five years. In the first two development plans reference to transport is only made in terms of road construction and the breakdown of costs by road name, type of work, machinery required, estimates and expenditure. The third Development Plan, published in 1969, discusses only transport matters related to the sea, the car and road facilities. There is also the realisation that "*transport plays a pivotal role in the process of economic growth and therefore the development of infrastructure should not be allowed to lag behind*" (Government of Malta 1969). The total expenditure estimated for roads for the period 1969 to 1974 was €8.43 million, whilst €4.57 million and €8.43 were spent on ports and the airport respectively.

The Development Plan for the period 1973-1980 (which covered the longest period of time for such plans) provided a first attempt at a policy to govern investment in the road sector. It included measures such as to:

- limiting large-scale projects to the minimum compatible with essential communication needs (projects will also have to be economically justified)
- improving the flow of traffic in urban areas and industrial/tourist areas
- improving existing roads through road widening, removal of dangerous corners and general traffic improvements
- improving the quality of road surfacing by extending the hot asphalt programme to reduce incidence of recurrent maintenance

In this Plan, roads are seen as an economic regulator "... *road projects can be advanced or postponed depending on how important it is to generate economic activity in this particular sector, or to deploy resources instead on to more directly productive work*" (Government of Malta 1973). In 1973 Air Malta, the national air carrier, and Sea Malta, the national fleet, were set up, with expenditure on roads estimated at €18 million. In the Development Plan for 1981-1985, a description of the works carried out on the road network to link industrial and residential areas was provided. These aimed to improve traffic and eliminate bottlenecks. Therefore measures were listed as to:

- further develop a main and secondary road network that will be adequate to cater for the growth in road traffic and ensure ease of connection;
- improve the road system including resurfacing, landscaping, installation of road signs to facilitate travel for tourists and arranging roads to eliminate congestion and provide good drainage for storm water collection; and
- improve road safety through campaigns and enforcement (Government of Malta 1981).

A similar approach was also repeated in the 1986-1988 Development Plan. The national road system was upgraded to cater for the increasing traffic demand. New schemes were aimed at relieving traffic congestion wherever this still existed, with works on road realignment, widening, and adjustment of gradients

and improved standards for road maintenance. Safety and traffic regulations, including parking, were being introduced. The demand for infrastructure during the late 1980s had increased considerably, even though car ownership levels were not as high. Supply of new infrastructure was at its peak during the late 1980s and early 1990s, following the major infrastructure projects on the main arterial network. This situation though soon declined as governments invested in other projects and the quality of the infrastructure deteriorated.

Once the Nationalist Government came to power in 1987, work started on the Structure Plan for the Maltese Islands. The progress of the development plans is marked by two main events. The first followed the 1973-1980 Plan, in which, detailed reference to road and infrastructure work required on the road network was not listed. Second, all development plans assessed the work carried out in accordance with previous plans. However, following the 1973-1980 Plan, this practice was not continued. In the end it is evident that the development plans commissioned by the Government in the late 1980s were reduced to a political publicity document, with little significance for policy making or planning.

The problems related to the road network improvements and road safety concerns identified in the last two development plans are still major issues for Government today. To some, the do-nothing approach adopted by the Governments vis-à-vis policy to either provide for or restrain the increase in car ownership led to some form of 'natural' control. Stafrace (2001) suggests that the lack of investment in parking facilities and road infrastructure in sensitive areas led to a natural decline in the number of people travelling by car. Sliema and Valletta attract a large number of daily trips and are both restricted in terms of road space and parking. Each locality was only granted planning permission for one multi-storey car park located just outside the city walls in Valletta and in the centre of the shopping area in Sliema. Even though the location of these car parks was heavily contested, from on-site observations, it is evident that both areas are today congested and to a certain extent it is this congestion that ensures the relatively large number of people travelling to Valletta and Sliema by

bus rather than by car. The Household Travel Survey identifies a large proportion of trips to Valletta still being done by bus (Malta Environment and Planning Authority, 1998). With car ownership reaching saturation levels as the population gradually stabilises, Stafrace suggests that, if governments do not take a leading role and take measures to improve the situation, a similar 'natural' restraining process will occur in the coming years.

The first concrete step towards some form of strategic planning practice came with the **Structure Plan for the Maltese Islands**, commissioned in 1988. The Planning Authority became the competent authority; with a Transport Planning Unit to oversee issues concerning the transport implications for land use development planning. Eventually, in 2001 the Planning Authority integrated with the former Environment Protection Department to become the Malta Environment and Planning Authority.

Since the approval of the Structure Plan and its adoption by the same Authority, a number of transport policies have been implemented successfully. Others are now out-dated and need revision. In some cases a policy has been applied vigorously to the detriment of other less easily applied policies. To this end, the Structure Plan is presently undergoing a review process. The strategy outlined in the current Structure Plan is conflicting, and whilst it emphasises more use of public transport, it still promotes high levels of parking facilities for new developments. The strategy has policies which go beyond the remit of land use planning in order to fill gaps in transport legislation and to form a strategy for the improvement of the transport system. The Plan establishes five elements for a land-based transport strategy:

- The better co-ordination of land use and transport.
- The improvement of roads and the development of a road hierarchy.
- The effective management of the road system and of the traffic using it, and control of the impact of both on the environment.

- Improvement of public transport, especially where it can provide a reasonable alternative to the private car.
- Legal and educational measures aimed primarily at improving road safety and the efficiency of road use.

The Structure Plan for the Maltese Islands (1992) specifies 45 policies in the transport chapter. These policies contain various objectives such as the preparation of Transport Impact Statements, which are carried out using terms of reference similar to the ones used in the British impact assessment procedures (Policy TRA2). Other policies relate to vehicular parking principles for different areas around the islands (Policy TRA4). This policy has unfortunately made car parking available in most medium to large-scale developments and encouraged the use of private cars in all cases. In developing a road hierarchy, and its construction and maintenance (Policies RDS1-11), the Structure Plan established the work plan for the former Roads Department. It is evident today that the completion of the proposed work is of no great concern, as experience now shows that many of the proposed schemes may not be necessary (Malta Environment and Planning Authority 2002).

Through its policies on traffic and environmental management (Policies TEM 1-10), the Structure Plan also established, for the first time, specific Government measures in this area of competence. Unfortunately, most of these policies were not implemented. The policy to encourage walking and use of public transport has never been adopted. Reasons for such failure include the lack of transport expertise at local authority level and pressure from residents and motorists to provide for the car. Other policies related to Public Transport (Policies PTR 1-14) also go beyond the remit of the Malta Environment and Planning Authority. The Structure Plan established policies for the improvement of public transport policies which were not adopted by the Public Transport Authority.

The legal and educational measures (Policies LEM 1-6) included the enforcement of seat belts and the introduction of local wardens, both of which were introduced successfully in the mid-1990s. However, due to the lack of proper monitoring and data collection, it is not possible to assess their impacts vis-à-vis improved road safety. Even though these policies were not directly related to the aims of the Structure Plan for land use development planning, their introduction has been well received. In the case of local wardens, the Police have delegated much of the traffic responsibilities at the local level, so enabling them to focus on other matters. It is possible that the heavy reliance on local wardens (who have limited resources) is reflected in the overall lack of enforcement in respect of matters falling under the responsibility of the (traffic) police, as well as in the increasing numbers of road accidents.

Within the overall strategy of the Structure Plan, the Malta Environment and Planning Authority was also assigned the function to produce **local plans** which are usually prepared for areas in which pressure for development already exists or is anticipated. Thanks to the wide dispersal of development activity envisaged in the Structure Plan, there is not one urban area or settlement that will not experience some form of development. The Malta Environment and Planning Authority has prepared seven local plans to date. Table 7.1 shows the progress made in the approval of local plans since the setting up of the Planning Authority in 1992.

The first local plan issued and approved within a relatively short time was the Marsaxlokk Bay Local Plan. This covered the southernmost tip of the island (marked red in Figure 7.2) where much of the industrial activity takes place, thanks to the natural advantages offered by the topography of the bay. The Grand Harbour Local Plan was approved after five years, while all other published local plans are still being reviewed. Although it is a general feature of planning document that they can take years to be adopted, Malta is at present undergoing a period of rapid change, and the relevance of locals plans approved

after a number of years is questionable. Figure 7.2 represents the local plan areas.

Table 7.1 The Local Plans. Source: Malta Environment and Planning Authority, 2003b. Compiled by author.

Local Plan	*Consultation Draft*	*Approved by Minister*
Marsaxlokk Bay Local Plan (MBLP)	1994	1995
Grand Harbour Local Plan (GHLP)	1997	2002
North Harbours Local Plan (NHLP)	2000	*
North West Local Plan (NWLP)	2001	*
Central Malta Local Plan (CMLP)	2002	*
Gozo and Comino Local Plan (GCLP)	2002	*
South Malta Local Plan (SMLP)	**	

* awaiting approval, ** still being compiled

Figure 7.2 Local Plan areas. Source: Malta Environment and Planning Authority, 2003b.

Each local plan has its list of transport policies, although in the Marsaxlokk Bay Local Plan transport planning policies are few. Reference is made to the road hierarchy, road improvements and public transport, new distributor roads for

the Marsaxlokk/Delimara Power Station, including an alternative route avoiding for the Tas-Silg archaeological remains, and a new arterial road to Birzebbugia and the Freeport (policies MT01, MT02, MT04, MT05, MT06). Also, reference is also made to the designation of a heritage trail and the restriction of heavy goods vehicles (policies MT03 and MT07). The plan was initially prepared in 1994 and approved in 1995 and it is evident that, following the land use developments in the area, for example, the growth in residential areas and the expansion of Freeport activities, this local plan requires considerable revision, especially in terms of transport policy.

The other local plan approved by Parliament to date is the Grand Harbour Local Plan. This is certainly more comprehensive and deals with the most problematic areas of Valletta and the Three Cities. In the 12 policies on transport there is reference to improvements in the road network (policies GT01, GT02, GT03, GT05), the introduction of traffic calming measures (policy GT04), car parking (policy GT10), ferry landing points (policy GT11) and the traffic implications on land use (policy GT12). Public transport improvements for the area are listed in a number of policies (policies GT05, GT06). Most notable are the proposals for a long-term public transport strategy, which include a Rapid Transit System (mostly underground) servicing the whole of the Grand Harbour area (policy GT08) and development of a park-and-ride service to Valletta, Floriana and possibly even Hamrun (policy GT07).

This long-term strategy for the rapid transit route covers a large area (with a total of 22 stations) located around the Grand Harbour. Figure 7.3 shows a detail of the indicative proposal map for this system. However, no studies have been carried out to assess its feasibility. There are mixed views about the financial feasibility vis-à-vis the demand for such a system. The debate is recurrent in the local newspapers (see for example Galea and Xuereb 2001; Anon 2003b) and in planning arenas. A local contractor, suggesting a revision of the Rapid Transit System, last made reference to this system in the

newspapers in 2001, where he also suggested the inclusion of elevated monorail, bus transport and the underground, all at a cost of 'only' €238 million (Xuereb 2001).

Figure 7.3 Detail of the indicative map showing the Rapid Transit System in Valletta and the Grand Harbour. Source: Planning Authority, 1997b.

Local plans developed more recently by the Malta Environment and Planning Authority show development of the transport policy discourse. Issues such as "*providing for the pedestrians*" are suggested as policy in the North West Local Plan (policy NWTR6), whilst cycling is mentioned in policy NWTR8. Reference is made to vehicle access into the countryside (policy NWTR9) and the need to improve accessibility without compromising the rural environment. The most detailed transport policy framework is found in the North Harbour Local Plan. It provides 18 policies, which deal with improving the road network (policies NHTR01, NHTR09) and providing car parking facilities through park-and-ride systems, on-street parking in residential areas, car parks, commuted payment parking schemes, residents' parking zones and short-stay parking (policy NHTR04, NHTR14, NHTR15, NHTR16, NHTR17, NHTR18). It is evident that parking is a major concern in the region and the problem is mostly a result of high car ownership, usage and high population density.

There is also reference to urban transport control measures and the reduction of traffic impact, including accident reduction and traffic calming (policy NHTR10, NHTR11, NHTR12, NHTR13). Finally, there is reference to prioritising the needs of pedestrians and cyclists, specifically through the promotion of walkways and cycle ways (policy NHTR05). Another innovative policy proposed in the North Harbours Local Plan is the promotion of Green Travel Plans for organisations to reduce car usage and encourage measures to use alternative modes of travel, car sharing and paid-parking schemes. Figures 7.4 (a) and (b) show the transport strategy and the public transport routes for the region respectively.

Figure 7.4 Overview of the North Harbours Local Plan Transport Strategy (a) and Public Transport Routes (b). Source: Malta Environment and Planning Authority, 2003b.

(a)

(b)

In conclusion, the local plans suggest a *quasi*-ideal situation with respect to transport policies for the different regions. In reality though, public consultation meetings have ended in disputes over the under-supply of parking in the most contentious areas of the island (mostly Sliema). This might prolong - even further - the approval of such local plans or force major changes to the consultation draft.

The discourse of transport policy within the development plans, through to the Structure Plan and local plans, has changed over the years. Up until 2000, with the publication of the North Harbours Local Plan, much of the discourse was in favour of providing more for the car and hence, in effect, encouraging further unsustainable growth in traffic and mobility. Despite the Structure Plan having some form of sustainability discourse when referring to public transport developments, most of its policies relate to the provision of infrastructure for private road transport.

Following the publication of the North Harbours Local Plan and subsequent local plans, there is a change in the transport discourse. The policies in favour of pedestrianisation, cycling and Green Travel Plans all point to new and more 'sustainable' approaches to land transport policy. Given the context of both the Structure Plan and the local plans being national planning documents, there is certainly a change in discourse towards a more 'sustainable' transport policy for Malta overall.

General election programmes were utilised in this study to assess the political parties' views on transport policy. Appendix VIII shows the chronology of such documents and the political commitments concerning roads and land transport since the 1970s. Road construction and maintenance dominate the political agendas for much of the 1970s and 1980s (especially for the Nationalist Party). The Labour Party in its 1976 manifesto, highlighted the importance of improving the roads leading to the north of the island, to the beaches, for Maltese and tourists alike and improving the roads to agricultural areas. In that same year the Nationalist Party programme recognised the need for reform of public transport in order to improve quality of service and quality of life for those employed in the sector. The proposals looked at setting up a Public Transport Authority and introducing a system with more than one operator per route, and allowing the possibility for a bus owner to transfer his operator licence. These ideas, however bold, had to be shelved since the Nationalist Party lost the 1976 election and would remain in opposition for the next 10 years.

For the rest of the 1980s, transport is only mentioned in a very general terms and neither party suggested major changes to the system until 1987. Following 17 years of Labour Government, the Nationalist Party obtained a majority in the 1987 election. In that year's programme they criticised the Labour Government's approach and made a list of priorities for transport. These included:

- road haulage possibilities for Maltese operators on the continent;
- examination of the internal transport system with all interested parties and the introduction of new services such as regular public transport to all industrial estates; and
- the formation of a taxi association, with a particular role to be more effective in distributing the workload from tourism.

In subsequent years, notably for the 1992 elections, the Labour Party made reference to noise pollution caused by traffic, the need for a reduction in traffic in each town and village, and for the provision of a better public transport service. Meanwhile, the Nationalist Party promised to improve road construction standards. This was to be achieved by using a computer model to forecast changes in demand on the network and to guide improvements to junctions, street profiles, construction and materials. Practical solutions to problems of parking were also proposed, whilst bus owners were to be given a subsidy to upgrade their buses. (In the event, it took the Nationalist Government 10 years to issue the first bus replacement subsidies, whilst not much has been done regarding the parking problems and the re/construction of roads.) The Green Party, which contested the elections for the first time in 1992, made no reference to any form of transport policy in its programme.

By 1996 all three political parties recognised that there were transport problems that had been ignored for too long. The Labour government insisted on improvements in the construction of roads and the introduction of traffic management in village centres. At the same time the party identified the worsening state of public transport and hinted at the fact that, no matter how much money was invested in road construction, it would be unrealistic to seek to provide for all road user aspirations (unconstrained demand).

The Nationalist Party, who were still in power at that time, provided what was arguably the most extensive list of reforms necessary in the transport sector that

had ever been proposed in the political history of the islands. Reference was once again made to the need for new buses, the upgrading of the infrastructure and the need for an alternative to private cars which would encourage modal shift. A list of strategies that the Party promised to implement whilst in power included:

- the use of electric vans for historic centres
- the introduction of night bus services and new routes
- more information regarding the public transport service
- the re-introduction of ferry services (within the Grand Harbour) which would be operated in a liberalised market
- the building of car parks
- improving the driving tests and Vehicle Roadworthiness Test
- encouraging pedestrianisation of village cores
- introducing parking metres in zones where parking is a problem
- improving the flow of traffic on arterial and distributor roads
- improving the pedestrian environment
- increasing environmental enhancement projects on the roads

There was also a list of measures related to traffic management, to improve the road environment. To date, many of the reforms suggested in this and a very similar programme in 1998, have not been implemented, even though the Nationalist Party has been in power for all except two intervening years (1996-1998). However, the equivalent Labour Party and Green Party programmes all that time did not suggest innovative policies and, whilst in power between 1996 and 1998 the Labour Government did very little to instil a national transport policy and mostly focused on road construction and maintenance programmes.

The most recent election campaign, which took place in April 2003, was mostly concerned with achieving a consensus amongst the population on EU accession. However, all three parties listed a number of transport measures. The

most comprehensive list was provided by the Green Party which was the first party to present its electoral programme. Its policies were aimed mostly towards improving the environment and reducing car use, with a strong focus on public transport improvements, use of alternatively fuelled vehicles and introduction of more bus services to encourage patronage. Pedestrian priority, parking policies and park-and-ride systems were also mentioned. A number of measures suggested in this programme, however, had already been implemented, among these measures were:

- the replacement of leaded fuel;
- emissions testing in the Vehicle Roadworthiness Test;
- seasonal buses for beach locations;
- residents' reserved parking schemes for areas with supply constraints; and
- quality and durability of road maintenance and construction.

The Labour Party electoral program also included some measures worth noting; including the proposal to development a national strategy for transport and for the use of innovative policies towards improving public transport, such as the restructuring of the current network of services, studying the feasibility of introducing light rail, providing more environmentally-friendly modes of transport and introducing new parking schemes. The manifesto also underlined the fact that the Labour Government had compiled the Roads Master Plan during the previous legislature (1996-1998), and that it intended to follow the set time frames for its implementation.

The discourse in the Labour Party manifesto, however, is still in favour of unsustainable traffic growth, with specific references to measures to improve roads and junctions, to reduce congestion, to change 'radically' the transport infrastructure to limit circulation of vehicles in towns and to surface currently unsurfaced residential roads. There were many aspects of the proposed policies that aimed to establish some form of 'sustainable' transport, but the overall

balance was towards improving the roads and providing for motorists' demands.

The Nationalist Party election manifesto included the least comprehensive transport programme that is had submitted for the past three general elections. It listed 86 kilometres of roads to be re/constructed under the TEN-T programme with EU funding. It also promised to maintain 100 local roads every year (as was the case over the past legislature, it seems!) (Multimedia 2003). It would also ensure greater and more consistent quality of road construction standards. Other measures looked at the implementation of a park-and-ride system in Floriana and at the replacement of the bus fleet.

Political programmes are not binding. However, reference to particular transport measures is relevant to this analysis, as they enable a timeline over which policy discourse is analysed to be constructed. Much of the discourse in fact constituted by fragmented measures which, taken together, over the years, reveal a change from the more traditional view of 'providing more road infrastructure' and 'encouraging the unsustainable policy of traffic growth', towards some drastic measures concerning car restraint and public transport improvement which are suggestive of policy change.

Over the years, some government agencies have tried to adopt the more sustainable discourse as the basis of long-term transport policy documents. However, most of these failed to obtain Cabinet approval.

The Way Ahead report prepared by the then newly set up Public Transport Authority in January 1993 was the first document to identify the problems related to the scheduled bus service and all public transport services in Malta. The problems were listed at a time when public transport ticket sales were still high (even though declining) and government did not provide any subsidy to the operators. Before the setting up of the authority, bus operations were still

under the jurisdiction and control of the Police Force. The major problems identified in this report are still valid today, amongst which are:

- the accountability of public transport operators towards their clients; and
- poor enforcement and support by the Police and the leniency of the courts.

The overall approach to public transport suggested in this report was for a free market policy and to liberalise the market as far as practicable. A temporary measure, intended to last until the necessary studies had been carried out, was to restrict the importation of vehicles, so that it was a preserve of existing operators only, and a total ban on new permits in the transport sector. This is still applicable today for some sectors, including for scheduled bus operations.

The bus service was described as in 'chaos' with the need for more accountability. Issues identified as the cause of the problems within public transport in 1993 were:

- attitudes, education and a total lack of application of modern and scientific methods of business management;
- operators investing too little, with most vehicles incompatible with the local climate;
- while the Association oversees the rights and interests of its members, it does not show any initiative in enforcing duties or obligations, whether imposed by law or requested by the Authority;
- requests by the Authority for new services are usually used as barter for something else;
- the Police handing over bus scheduling to the Association, which in turn accommodates its members' needs not those of the public;
- scheduled services have increased over the years but do not meet user requirements and take very little account of the island's urban development, the travelling patterns of the public and the approved Structure Plan;

- it was suggested that, since only half of the 508 buses were used daily, only 300-350 buses were actually needed, depending on the seating capacity of each bus;
- many of the buses are never seen on the scheduled service and, since drivers are allowed to 'trade' routes (authorisation given by the Police), it is very difficult to trace an errant or missing bus. *This means that the route bus driver, whilst enjoying the monopoly of route work, also has the option of carrying out unscheduled work at the same time. The net loser of the system is the travelling public* (The Way Ahead 1993);
- the working conditions of bus drivers are not good with a 16-hour day, no proper rest room or toilet facilities, relatively low salaries and a generally low standing in society (it was identified that these long days were not a safe practice and therefore should be stopped);
- quality and upkeep of the buses are not of a high standard (inspections were kept low to maintain the service even though testing equipment and standards were not up to European levels);
- drivers lack education and among the bus dispatchers there is an overall problem of literacy.

Following the identification of these problems with the scheduled services, the report also lists recommendations for the improvement of public transport in general. Accountability is the primary concern, with the focus of the proposals being the establishment of a company with the task of sub-contracting the routes to the various bus operators. The company would be liable for penalties should the work not be carried out, and would function as a trading company. In addition, a number of supporting measures were suggested:

- the number of buses should be reduced and bus owners would choose to specialise in scheduled or unscheduled services;

- buses would be replaced with vehicles meeting new specifications with the assistance of a government subsidy (reference is made to subsidy applying only to buses working exclusively on scheduled routes);
- driver training to be introduced;
- shifts to be introduced to reduce the long working hours;
- proposals made for new routes;
- the replacement of dispatchers with an electronic system, with responsibility for operations passed to the new company noted above;
- the Authority and company would enter into a contract which, among other things, would include a fare structure, and a schedule of penalties to be incurred for various infringements;
- the introduction of modern ticketing techniques; and
- scheduled bus system operations should be standard for both Malta and Gozo.

These measures, as listed in the report a decade ago, address most of the problems faced today by public transport. This is a clear indication of the lack of proper investment, professional management and the apathy of governments in dealing with the public transport service.

Other sectors covered by the report include the unscheduled bus services (blue coaches), the minibuses (red), garage hire (chauffeur driven and self-drive vehicles), taxi service and *il-Karrozzini* (horse drawn cabs) (Public Transport Authority 1993). Up until the writing of this report, all these sectors were protected by a restriction on the number of operator permits. The report proposed liberalisation of all unscheduled services, which would compete in a free market and hence be incentivised to improve their services.

Reference is also made to the problems encountered with the taxi service and the horse drawn cabs. These are related to fares (over-priced), education and

poor repute of the drivers and, in the case of horse drawn cabs, the introduction of legislation to make passenger liability insurance mandatory.

The concluding remarks of this report highlight the importance of pricing private transport in such a way as to increase public awareness of the advantages of using public transport. These measures were extremely bold statements at a time when transport policy was very much car-oriented. The policy discourse of the report suggests a strong will to change, with little fear of how the operators would react. It is, however, unfortunate that most of the problems identified in this document with regard to the scheduled bus services were never acted upon as recommended.

During the period 1996-1997 the Department of Health Policy and Planning within the Ministry for Health commissioned two reports dealing with the prevention of road accidents. Following the launch of a National Health Policy - *Health Vision 2000* - in December 1995, the Government aimed at reversing the increasing number of fatalities and injuries on the roads. One document, entitled **A Strategic Plan for the Prevention and Management of Road Traffic Accidents**, was written by a committee appointed from the personnel of the Medical Association and Hospital, the Planning Authority, the Association of Insurance Companies, the Traffic Control Board, Roads Department, Public Transport Authority, the Police, Local Councils and the Health Promotion Department within the Ministry for Health.

The report portrayed the road accident situation for a small country with increasing levels of development accompanied by higher volumes of slow-moving traffic and higher population densities (Department of Health Policy and Planning 1996). The report concluded with an action plan and a total of 101 recommendations. These were grouped into:

- driving instruction, training and licensing

- legislation, enforcement and penalties (which involve alcohol legislation, speeding legislation, and legislation enforcing use of occupant protective devices)
- education
- vehicle architecture and engineering
- vehicle maintenance
- the road environment
- medical fitness to drive
- drugs, medication and driving
- the older driver
- first aid at the accident site
- hospital care

This comprehensive report is still relevant today, should the Government wish to make better road safety a high priority. Some of the measures suggested in the document have been implemented successfully, such as the introduction of seat belt legislation and breathalyser testing. Others are still being discussed while some are a requirement of the Transport *Acquis* (for example, improvements in driver training and testing). Therefore, even though not adopted in entirety, this document prepared the ground for individual measures to be implemented and for change to occur.

In October 1997 the new Labour Government commissioned another document entitled **Report of the Committee for the Prevention of Traffic Accidents**. This restated the importance of the previous report and the relevance of the policies suggested there. The committee, therefore, reiterated much of what had been said in the previous document, whilst presenting fresh insights into the cause of accidents related to alcohol. It was reported that, in 23 per cent of all fatal accident cases, there was a high incidence of alcohol in the blood.

In its recommendations the report looked at the need for organisational restructuring and improving co-ordination between stakeholders. It was suggested that a Commissioner for Traffic be appointed to facilitate communication between organisations under the auspices of the Ministry for Transport. In conclusion, this report outlined three major problems:

- the need for co-ordination
- the need for constant and comprehensive education and awareness
- the need for better law enforcement

Neither document was ever formally adopted by Government for, between 1996 and 1998, two different parties were subsequently in power (see section 2.2.1). Upon re-election in 1998 the Nationalist party changed its policy priorities and focused its efforts on the setting up of the Transport Authority and transposition of the EU *Acquis*. Despite the efforts to introduce policy change in the discourse, politics hindered the implementation and adoption of the measures suggested in these documents.

In contrast to the formal networks which produced the documents analysed so far, the Committee for the Creation of Residential and Commercial Parking Schemes brought together four experts from different ministries in a policy arena to discuss the issues surrounding town centre parking. The Committee produced **Guidelines for Controlled Parking Schemes** to be used by Local Councils willing to introduce parking control. The Cabinet of Ministers later approved these Guidelines and endorsed time-managed parking as a more politically-acceptable alternative to introducing parking charges, which would have been perceived by many as an additional tax imposed by Government. Following the pilot project in Gozo, both politicians and the general public criticised the system, but it nonetheless became permanent.

The approach used in producing and implementing these guidelines was very innovative for Malta, as it brought together different ministries in an informal

policy arena to decide upon a particularly important issue. The contribution of time-controlled parking to 'sustainable' mobility is debatable, however, as in most cases it does not act as a strong deterrent to car use and simply encourages more parking turnover for visitors in town centres, shifting the problem of commuter parking into the outskirts.

7.2.2 Policy discourse in the stakeholder interviews

Another method employed in this study to analyse policy discourse is semi-structured interviews with transport policy makers and stakeholders. The interviews also aimed to present the policy priorities for Malta suggested in Chapter 6 and to test their applicability.

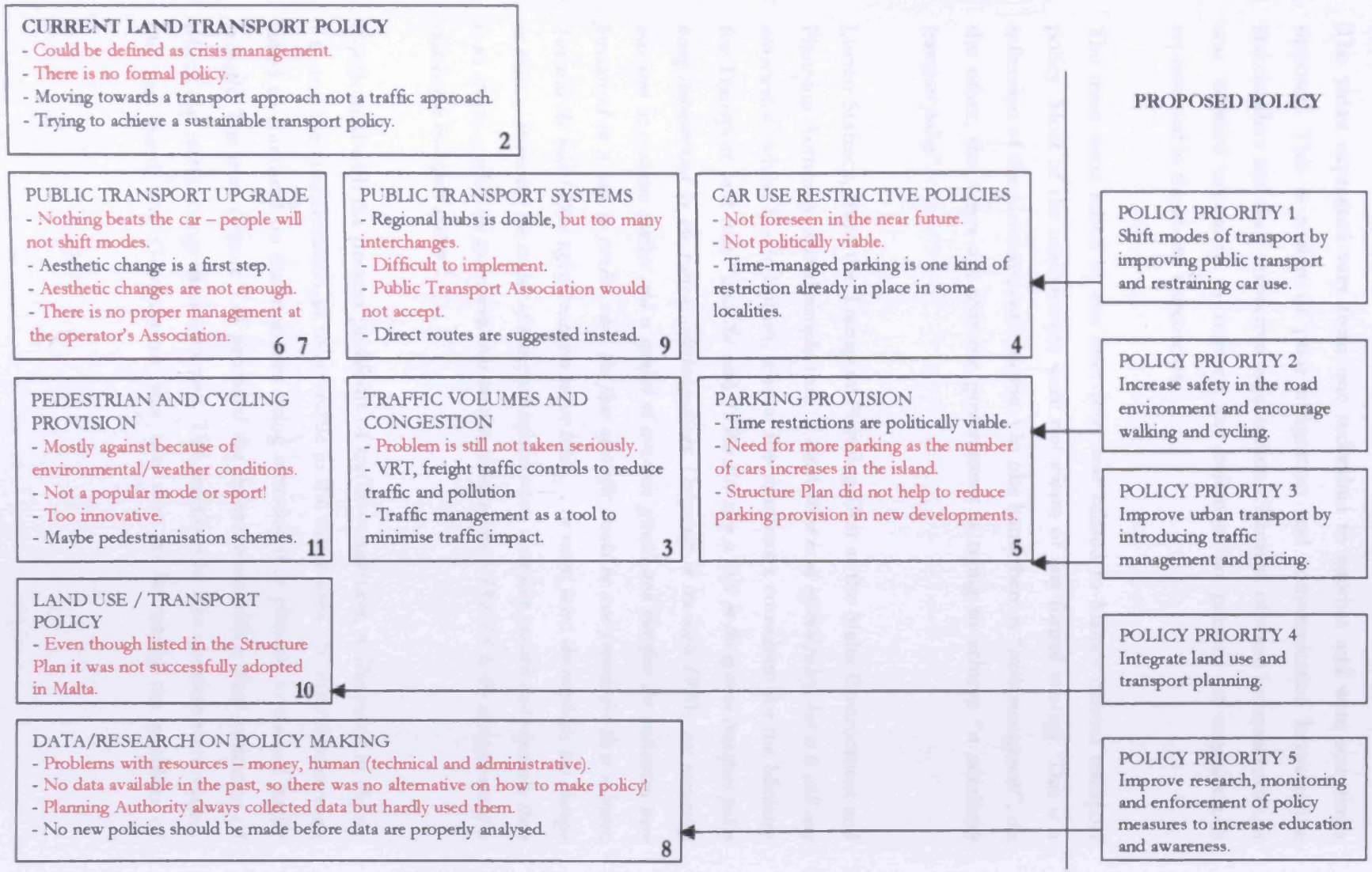
The interviews carried out between 2001 and 2002 revealed new insights into the structure and function of transport policy in Malta. Also, with the setting up of the Malta Transport Authority in 2002, the working environment within land transport became very dynamic, as administrative structures changed and new people were, for the first time, employed within the transport sector. Over and above this internal restructuring, in March and April 2003 Malta went through a referendum on EU membership and general elections leading to the re-turn of the Nationalist Party to government with a mandate for EU entry.

During this period of change, all the stakeholders interviewed for this study in 2001 retained their positions, with only minor changes to their roles resulting. Following the April 2003 elections, Censu Galea was re-appointed Minister for Transport and Communication, which meant that the political agenda remained the same. At this early stage in the term of office, it is difficult to assess whether the stability of personnel and policy will be beneficial for the overall adoption of a new transport policy. Nonetheless, the interviews revealed a number of key issues, which will assist in achieving the third objective of this

study; that is to identify the problems in adopting a 'sustainable' transport policy.

The interview responses are summarised in Figure 7.5. Discourse of change is marked in black whilst discourse leading to policy inertia is marked in red. In this manner it is easier to identify the overall perceptions of the proposed/discussed transport measures. Reference is made to each item discussed in the interviews (as suggested by the Interview Guide in Appendix VI). These items are also in line with the suggested policy priorities in Chapter 6.

Figure 7.5 Interview responses concerning policy priorities as suggested in Chapter 6 (the number refers to the question numbers in the Interview Guide in



The views expressed vary from one individual to another and were sometimes opposed. This is a sign of poor integration and communication between the stakeholders and their respective organisations. Because of these inconsistencies, it was deemed necessary to remove any reference to persons or organisations represented in the above statements.

The main issue raised by the interviews was related to Malta's current transport policy. Most of the interviewees were not aware of any formal strategy. This is a reflection of the Government's inertia. On one hand there is "*crisis management*", on the other, the views are that the government is trying to achieve "*a sustainable transport policy*".

Lucien Stafrace, from the Transport Planning Unit at the Malta Environment and Planning Authority, stated simply that "*I think there is no official policy, but it is still very car-oriented*" whilst David Sutton, who at the time was a consultant for the Ministry for Transport said that "*since the early 1990s I've seen a shift in the general transport policy being implemented by the various administrations. Originally in the early 1990s, car ownership was seen as a status symbol and a symbol of economic growth and therefore the authorities were pressurised in a way to predict what the flow of traffic would be and provide for these volumes. Towards the mid-1990s safety became a major issue.... In recent years, the emphasis has changes in that.... increasing the supply of transport infrastructure is no long possible and physically there is no space.... what the government has been working on since 1997/8 is the development of a sustainable transport system*".

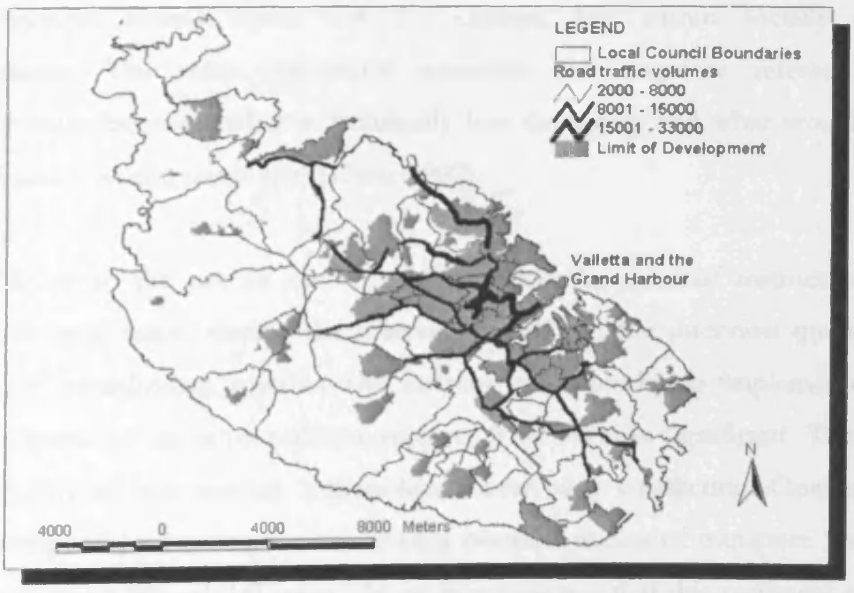
Confronted with the present problems of traffic congestion, as illustrated in Figure 7.6, and the concentration of most traffic in the urban area, the interviewees were asked to comment on the measures being introduced or planned to control traffic growth. The map (Figure 7.6) provided the interviewees with a clear indication of where the traffic congestion occurred. The reactions to this question were varied. On one hand, the Government was not seen to be taking the problem of

congestion and pollution seriously, whilst two other officials from the Malta Transport Authority listed a number of measures that have been introduced to curtail congestion and reduce pollution. These include:

- the full adoption of the Vehicle Roadworthiness Test in 2005;
- measures to reduce freight traffic on parts of the network in an attempt to reduce both damage to road surfaces and pollution; and
- the use of traffic management tools to minimise impact.

However, as was pointed out earlier, traffic management schemes are still car-oriented. This applies to both the measures being implemented and also the practice of implementing *ad hoc* measures to treat the symptoms of congestion.

Figure 7.6 Traffic volumes on the arterial road network in Malta. Source: Attard and Hall, 2003.



The responses obtained for the questions on unlimited parking provision show that professionals' attitudes still favour provision for the motorist. This is mostly because policy makers are motorists themselves, because of the lack of legal backing in controlling parking provision (reference to the Structure Plan is made here) and, above all, because of the influence of politicians. One of the respondents referred to time-limited parking, which is being slowly implemented in various town centres.

The interviewees were also approached on the issue of car restraint policies and their applicability in Malta (with special reference to Valletta). Negative responses were recorded from all the interviewees because of their political implications. Within the current political structure the impact would be great on a large proportion of the electorate (motorists). Therefore, reactions to Question 4 in the Interview Guide were negative: "*not foreseen in the near future*" and "*not politically viable*". The reference here to the time-managed parking scheme being successfully implemented shows some will for change, but within socially acceptable boundaries. The most successful measures are therefore referred to as a compromise between what is politically less damaging and what would have the least impact on the status quo (Delia 2002).

In addition to the use of car restraint policies, the issue of restructuring public transport was raised during the interviews. Initially, the interview questions were aimed at establishing whether the current measures being implemented by the Government to improve public transport were seen as significant. The reactions obtained from the various stakeholders were very conflicting. One interviewee adamantly referred to the car as the only possible means of transport: "*nothing beats the car.... people will not shift modes*". Most worrying was that this comment came from within the Transport Authority's administrative structure, giving a good indication of their views on policy priority 1 as suggested in this study, that is, to alter modal shares.

Other responses referred to the aesthetic changes occurring with the replacement of the bus fleet as a first step, whilst others stated that this was not enough if the government truly intended to improve the service. Reference was also made to the need for proper management in public transport operations.

When confronted with the maps showing the pattern of travel demand and the new proposed new public transport service structure, the overall responses were positive but there was an evident fear of change, with responses referring to the difficulty of implementing such a system. It was, for example, suggested that the Public Transport Association would resist by not operating the routes. The biggest problem was recognised as being the lack of political will to face change, given the pressures that would be applied on Government by the operators keen to keep the status quo. The fact that few actually commented on the proposed structure as presented in the map reflects apathy towards change. No reactions were recorded on the benefits of the proposed system (as suggested in this study). Only one person referred to the structure and commented on the possible high interchange penalty because of the added interchange at hubs. In conclusion, the system was viewed as too innovative and requiring too much change to be implemented.

Negative responses were also recorded with reference to alternative modes of transport suggested in the policy proposals, such as the provision for pedestrians and cyclists. Respondents were not against measures to encourage cycling and walking, but had reservations about their successful implementation in the islands. One reason for opposing major projects to improve cycling infrastructure is Malta's topography. The lack of flat land means that cycling is not easy, whilst the climate, being very hot in summer, would not be ideal. Some referred to the policy as being too innovative for Malta and not easily introduced. There was a more positive response, however, to pedestrianisation, with most interviewees agreeing on pedestrianisation of town centres, as is the case of Valletta's main street already and the proposals to pedestrianise the shopping areas of Sliema.

The responses to these questions throw some light on the successful implementation of policy priorities 1, 2 and 3 suggested in Chapter 6. There is an overall negative approach to the introduction of measures which could arguably improve the present transport situation. It is also evident that the will to change is influenced by politics. Many stakeholders had in the past made suggestions that would encourage sustainable transport, but were turned down as these did not fit well with the political agendas being pursued.

In line with policy priority 4, of integrating land use and transport, a question was put to the Transport Planning Unit Manager of the Malta Environment and Planning Authority. The question focused on whether land use planning was integrated with transport planning within his organisation. Despite it being an objective of the Structure Plan, he felt this had not been achieved. Over the years development applications had been approved despite their negative impact on the transport system. This outcome was also linked to the lack of a national transport strategy, which would have brought powers to control land use developments that encouraged car dependence.

The last questions focused on the need for data collection and research for more informed decision making (policy priority 5 in Chapter 6). Unfortunately, a number of interviewees did not acknowledge the importance of good data for policy making. Reference was made to the fact that if data were not available, then policy makers would have to base their decisions on anecdotal evidence. Particular agencies, namely the Malta Environment and Planning Authority and the Ministry for Local Councils, have always collected data but, unfortunately, not much of the data was analysed and efficiently used. An evident problem was the lack of human and financial resources to conduct such studies and data collection exercises (research and development). Only one interviewee, from the Transport Authority emphasised that no policy should be made without proper monitoring and collection of data.

The use of maps (Figures 3.1, 3.12, 6.2, 6.3, 6.4 and 7.6) during the interviews helped to stimulate and guide the discussion. The benefits of using map data were identified as:

- reducing the risk of ambiguity;
- helping to describe geographic distribution of demand and facilitate the bus proposals;
- adopting a more systematic approach to transport needs; and
- highlighting the need for more accurate data.

The overall response to the maps stimulated a lot of discussion. Many needed to understand that data are required in order to understand processes and forecasts. Unfortunately too few had ever worked on such systems. The innovation, however, was appreciated and served its purpose of stimulating discussion.

Responses varied between interviewees with respect to the questions asked. Even though a will to change was predominant, some had been employed in the system for a long time, and hence judged the future of transport in terms of past experiences; mostly through the experience of failure to convince successive governments to adopt long-term 'sustainable' policies. Such pessimistic attitudes are likely to hinder development and innovation, because the holders are still in the position of being able to encourage or hinder policy change. Having to participate in the adoption of European Union policies, however, might act as a catalyst for change, even in the most difficult cases of transition, such as the required changes to the current public transport system.

The fragmentation in the discourse of the people involved in transport policy and planning was very evident. The Minister for Transport also raised this point during his interview. At the time, the Ministry was working on integrating the

administrations of the Roads Department, the Licensing and Testing Department and the Public Transport Authority. Even though today formal integration has occurred and the Malta Transport Authority is functional, just how effective the collaboration between directorates within this Authority is in practice remains open to question.

7.2.3 Policy discourse in public arenas

A national conference entitled **Moving 2000** organised by the Public Transport Authority on the 13th of March 2000 marked the first-ever public discussion on matters related to public transport in Malta. Speakers at this conference were numerous, and included the then Chairman of the Public Transport Authority, Alfred Triganza, the Minister for Transport, Censu Galea, Miriam Camilleri and Joseph Camilleri representing the Commission for the Advancement of Women and the National Commission for Persons With Disabilities respectively, Victor Spiteri, President of the Public Transport Association, Lucien Stafrace, Manager of the Transport Planning Unit, Anthony Pearce of Access Euro Consulting and David Sutton, then Research and Development Manager at the Public Transport Authority. Two foreign guests represented the International Union of Public Transport (UITP) and Group ID, Paris on transport projects.

There was general consensus on the need for a more integrated approach to public transport and the need to improve the offer. Triganza tackled the political aspect and remarked on the inability of governments to put politics aside and provide continuity in planning for a better public transport. He also referred to the lack of professionalism, accountability and the need for socio-political changes in the way public transport is viewed. In response to the Chair's address, the Minister explained how plans were underway for the setting up of a single transport authority, which would integrate all aspects of transport with increased

enforcement and increased awareness of road safety. The Minister also made reference to reducing social exclusion, especially in respect of persons with disabilities and the elderly. Joseph Camilleri explained how the infrastructure should be improved to increase accessibility whilst Miriam Camilleri explained the gender issues related to public transport accessibility.

Victor Spiteri acknowledged that the efforts of the Government in 1977 to bring together all bus owners into one Association provided a fair and equal income for all, the removal of competition and the need for more discipline. However, Spiteri stated that, because of the continuous changes in the administration of the Public Transport Authority and changes in governments (various ministerial agendas) during the past nine years of operation, there was a serious problem of continuity. During the 1990s the Authority fell under the responsibility of five different Transport Ministers, five different Chairmen, six Boards of Directors and three general managers. According to the Association, a number of measures could be adopted to improve public transport. These included:

- more environmental awareness and protection
- new buses and ticketing machines
- improved infrastructure (roads, bus lanes and bus priority measures, shelters, etc)
- financial rewards for good drivers
- continuity and discipline
- travel demand studies

The Association expected the Government to adopt and finance the above suggestions. Spiteri claimed that, as operators, the bus owners could not implement measures since the Government regulates the service. Therefore, the government should also take the responsibility to improve it. This statement is very representative of the *laissez-faire* attitude of the bus owners and their approach to

operational planning, which according to Sutton (2000) is supply-led rather than demand-responsive. Inevitably, the network is characterised by an over-provision of bus services in some parts of the country and an under-provision in other parts.

Stafrace underlined the importance of land use and transport planning and the need to introduce measures to reduce car use (using car restraint measures) especially around the Valletta/Floriana area and the introduction of bus lanes to improve bus services. The removal of parking spaces from Valletta would allow for the conversion of reclaimed parking spaces into paving and landscaping to encourage pedestrian activity. It was evident from his speech that he regarded the situation in respect of traffic congestion as being serious enough to have warranted immediate action. With regard to financial assistance, Pearce discussed the funding opportunities for Malta under EU programmes once Malta became full member.

David Sutton, Research and Development Manager at the Public Transport Authority, concluded the conference by focusing on the technical aspects of bus operations in Malta. This paper also strongly criticised the way the State considered the bus service as an instrument of social welfare when a more accessible and comfortable means of transport (the private car) was offering a better alternative. Therefore the present priorities in the transport system do not encourage 'sustainability'.

Sutton tackled public transport policy by analysing the costs involved in running the current routes. He focused on the huge losses incurred by a number of social routes and the draining of finances from more popular parts of the network. He also commented on the fact that, irrespective of the increases in bus fares over the years, the modal transfer to private cars was probably inevitable. Subsidisation of bus services is a common practice throughout the world but it should not discriminate against the bus user by reducing incentive to provide a better service. Revenues for subsidies could be obtained from another transport sector and be a

visible means of supporting the operations of a more socially acceptable transport mode.

In conclusion, Sutton proposed direct subsidy only for socially necessary bus services, which, as a policy, would require the segregation of profit-making routes from non-profit making routes and the establishment of the relative social importance of non-profitable routes. In addition to this, he suggested parking control measures and means of cross-subsidisation of public transport services from parking schemes in centres such as Valletta and Floriana.

The discourse espoused in this conference was varied, with most of the contributors arguing the need for change, including in terms of improvements in the services, integration of land use and transport planning, and better financial and operational management. Similar attitudes were also recorded in the second public workshop discussed in this study.

Following the publication of the EU Transport *Acquis* and the closing of negotiations on Transport in October 2001, a workshop entitled **The Future of Transport Policy in Malta** was organised in May 2002. This was the first public meeting of stakeholders, policy makers and the general public to discuss the future of transport policy in Malta. Attendance at the workshop was above expectations, with over 50 participants.

A number of issues were discussed, including:

- the lack of proper data collection and transport information
- the need to reduce the use of the car (and what are the alternatives?)
- congestion during peak hours and road safety issues
- 'proper charging' – could it be the way forward?

- the cost of implementing a strategy/plan (financial investment)
- stating the priorities

Some of the issues discussed stemmed directly from the present research, for example, the lack of proper data collection. There was a general consensus on the need for more data. The problem, once again, was identified in terms of financial and human resources. Another aspect related to the data themselves was the standard methods of data collection. It is evident that, over the years, various methodologies have been adopted to collate information and this has led to inconsistencies in the data. During the workshop the question of funding research projects from the income generated by transport was debated.

The second issue referred to the need to reduce car use and provide an efficient and cost-effective alternative mode. At present the bus service could provide an alternative. Car use restrictions are not popular and it is therefore important to concentrate on improving the public transport service first. Bus priority was one of the measures suggested by the representatives of the bus operators (Spiteri 2002). This is admittedly very difficult in the narrow congested parts of the network where there is no room for bus priority lanes. Education also plays an important role in modal shift, particularly when there is a high social status associated with the car. Dependence on private mobility is today part of the lifestyle experienced by adults and children alike. The same would be applicable to cycling and the use of water transport (where available).

Achieving modal shift is not aided by the continuing supply of extra capacity for the use of the private car, especially with regard to parking. In already congested areas large car parks are being constructed or are planned. It was observed that adding supply would only increase the use of the car, which leads to fewer people using alternative modes.

A third issue raised within the workshop was that of road safety. Initially the focus was on school children, with the need for improvements in the licensing of drivers for the carriage of school children and more enforcement of road traffic regulations. Improving road safety has been on the government agenda for the past six to seven years. Unfortunately traffic calming schemes, such as the narrowing of streets, have been highly criticised by motorists. The general lack of education and awareness of the public makes the introduction of these schemes very difficult. Also, proper costing of congestion, accidents and other externalities is not carried out within the present policy system and this was heavily criticised by those attending the workshop.

The charging policies were also discussed. There was consensus over the need for a revision of the Valletta license and the introduction of measures to effectively charge for parking space. However, the problem of implementing such schemes and their political unpopularity were raised. Following the implementation of time-managed parking in Gozo and subsequent letters in the newspapers stating the need for parking charges, it was evident that motorists were ready to pay for longer-term parking (see for example, Zammit 2001).

Towards the end of the discussion participants agreed upon the need for a strategy/plan. The plan can be scaleable: that is, it might take small initial steps that require little effort and minimal changes, and a relatively small investment (Delia 2002). The Structure Plan Review was suggested as having the power to adopt such a plan. However, there is now the Malta Transport Authority, which by law, should provide the transport policy for the country. Given the legal pressures to produce such a plan, the Malta Transport Authority should make production of this document a priority.

One of the problems envisaged for the implementation of the plan is the financial burden. With the present restructuring and investment in large infrastructural

projects such as, for example, the construction of a new hospital, the Government cannot 'afford' to implement large capital projects. EU accession, however, was suggested as opening up a possible source of funding.

Given the current situation, there are a number of measures required to improve transport in Malta, but there are also problems of implementation of unpopular measures and the funding of a national strategy. Within this context and these limitations, the authorities must state their priorities. The public should be made aware of the costs of increasing private mobility and of the impending transport situation. During the workshop the guest speaker, Professor John Adams, suggested the promotion of positive measures. In many countries restraint policies have been unsuccessful because of the difficulties of changing the mentality and culture. Reallocating importance to the local would entail giving town centres back to the people by highlighting the benefits of traffic-free centres and the increase in pedestrian activity and safety. Alongside education, enforcement must be an on-going campaign.

Improving public transport was identified as the first priority. The discussion focused on the provision of efficient public transport, education, promotion and awareness of the benefits of public transport. It will still be difficult to achieve a major modal shift, but even the lowest level of success would be a first step. Other measures, such as improving urban areas, reducing polarisation and increasing access, were mentioned, but because of time restrictions these issues were not discussed in detail.

These public arenas bring policy makers closer to the public. Positive attitudes towards change were recorded in both examples of public debate. This should in turn reflect what the public really wants and expects out of government policy. Within these fora the public is asked to participate in the debate and subsequently to adopt the policies formulated. In conclusion, such arenas for discussion have

provided for an overall discourse for policy change and support for more 'sustainable' mobility.

7.3 Problems of implementing a sustainable transport policy

The aim of this chapter was to identify the problems with implementing innovative transport policies in Malta. This was achieved by analysing past and current policies through the various policy networks, arenas and discourse.

The analysis identified problems which have in the past not only hindered the development of a transport strategy, but were also obstacles in the implementation of existing policy. A brief discussion of these problems follows in this section.

- **Lack of proper and accurate information**

The formulation of policy should be based on informed decisions and adequate support tools. Unfortunately, for many years, there was a general lack of proper and appropriate information. Despite this, a considerable statistical overview has been presented in this study, drawing on efforts by particular individuals in various entities to collect information. However, no analysis was previously carried out, such as road accident analysis and travel demand forecasts for different modes of transport. There are still today many conflicts over the validity of certain data. For example, the public transport patronage data published by the Authority were criticised by the operators for not representing actual patronage and including both daily and weekly tickets on a similar basis. Such examples lead to either misinformed policy making or bad planning. Decisions are taken based on 'experience' of how the job gets done and how things are traditionally done in the country.

- **Lack of professionals in the field of land transport planning**

Successful planning and implementation of a sustainable transport policy would require - primarily - a number of professionals in the field of land transport planning. Hence, another problem hindering the adoption and implementation of transport policies in Malta are the limited human resources. There is a general lack of expertise in the field, with most policy makers adopted from either an unrelated public service post or from the private sector, and having limited knowledge or specialisation in the field of transport planning. Once again, the idea that most decisions are based on experience rather than information or knowledge applies.

This problem is very common in small communities. With such a small population, Malta cannot provide the necessary number of experts and technical people to fulfil the capacity required to staff a national transport authority. The European Union had identified this problem and gave Malta specific pre-accession funds to invest in organisational capacity-building where necessary.

Also, in view of this lack of expertise, over the years the government has relied heavily on foreign assistance in the field of planning; initially, with the preparation of *The Structure Plan for the Maltese Islands* by British consultants. Later on, the then Planning Authority also employed a number of British planners. During these first years of operations these experts, who maintained residence in Malta and were employed on contract with the Government, trained few local people. Only recently has the Malta Environment and Planning Authority invested in the professional development of staff, whilst the Transport Authority has still not completed its capacity-building exercise to start professional development programmes. This is especially true for specialisation and training of staff in particular fields of transport planning, management, regulation and research. Today, it is clear to some local policy makers that lack of understanding of the Maltese socio-political and cultural environment has led these foreign experts to

make misconceptions and therefore to draw up wrong conclusions. In some cases this has also led to the under-utilisation of the expertise.

- **Malta's two-party political situation**

The political situation in Malta, which in recent electoral history has seen relatively small numbers of votes among particular parts of the electorate have a disproportionate affect on election outcomes, presents a situation in which governments are very reluctant to introduce unpopular measures. These are seen as a threat which could compromise a term of office or the likelihood of re-election. The turnout during elections is very high and some powerful lobbies can easily overturn a government, if only by a small majority. A statement made during the discussion workshop was particularly interesting: "…. *every group of people which are influenced by a decision form a lobby, which in turn pressures and influences the governments' decisions*". For example, when the Labour Party elected in 1996 introduced higher rates for Water and Electricity (which in Malta are state-owned and are also heavily subsidised), the measure was so unpopular that, following rifts within the same party, pressure from unions and from the population at large, an early election was called after only two years of government. The Nationalist Party won the election in 1998, reduced the Water and Electricity rates and (to a certain extent) re-funded customers for the extra costs incurred during the two-year Labour government. This example illustrates the entrenched political situation in the islands. The level of politicians' control of policy making is much higher than in other countries, with most projects requiring approval by Cabinet. Projects that impose a cost on the population are not welcomed by politicians and are generally shelved. During its last term of office (1998-2003), the current Government had already dismissed projects such as the introduction of parking metres and taxes on the use of the car (even though some of these projects were electoral promises!). Politicians will naturally suppress measures, however evident or necessary, that may compromise their seats in Parliament. So, alternative projects are created where possible, such as

time-controlled parking. Taxes are also not imposed directly on the majority of users, but only on small groups which do not constitute a large number of votes. Such approaches have been the only escape routes for planners and policy makers trying to succeed at implementing unpopular measures (mostly of restraint) in this very small and local socio-political environment.

- **High status associated with the car**

An important social element within Maltese culture is the high status associated with car ownership and the low status associated with riding a bus. This hinders modal shift whilst it pressures politicians, and to some extent policy makers, to automatically give priority to this mode of transport. Many of the interviewees admitted that, whatever the outcome of policy, "... *I would never see myself riding a bus!*" This public admission by many transport regulators certainly does not augur well for a change in policy. The lack of understanding of the high costs of private car use plays an important role, while the inability to plan according to an integrated approach leads to situations in which measures aimed at improving public transport are overshadowed by measures to increase parking in town centres. This conflict results mainly from the lack of a stated strategy and the persistence of providing primarily for the car.

- **Organisational fragmentation**

The fragmentation of the industry has, by far, been the major stumbling block in the formulation of a transport strategy in Malta. The four major departments dealing with road transport at the operational level have always worked separately, sometimes even under different ministries. The only form of transport planning, on the other hand, fell under the responsibility of a land use planning agency which suffered from lack of communication and integration with other departments. Even within itself, the Malta Environment and Planning Authority was not able to

integrate land use and transport planning. However, since 2002, the Roads Department, the Traffic Control Board, the Licensing and Testing Department and the Public Transport Authority have integrated to form one authority. This authority, also has planning and policy functions, which indicate an important first step in the development of an integrated transport policy. Despite all this the Authority has still not presented a formal strategy / policy document for public consultation.

This *laissez-faire* attitude to state policy is reminiscent of past legislatures. Governments seem to be more content with dealing with demand, especially in particular constituencies, than with following a pre-determined plan of action, especially for transport. Up until 1996 the political agendas for elections covered road construction and some public transport improvements. This is hardly a strategy. After 1996 the Nationalist Government produced a list of measures, including changes in the bus fleet and the introduction of ticketing machines, provision of parking, and maintenance and upgrade of the road network. Most of the 1996 and 1998 promises have still not been implemented. The new buses are being bought slowly and the ticketing machines have only recently been installed, after seven years of negotiations between the Government, the Authority and the operators. As for the road network, the German Consultants (GTZ) estimated a LM20 million (€46.7 million) investment was required to upgrade the network in terms of re-surfacing and re-designing of particular junctions. However, those outside the Roads Directorate know very little about the roads programme. This was one of the most evident issues in the interviews and subsequent meetings with stakeholders.

Measures have always been too fragmented and often conflicting. Measures have dealt with specific issues and have always related to specific modes of transport, either the car or public transport. Also, reference had never been made to other modes, such as walking and cycling. This mentality is slowly changing, but whilst

the Government takes its time to formulate and adopt a strategy, the situation on the roads gets worse. Compounding these problems is the actual enforcement of existing regulations, which is inefficient.

- **Lack of infrastructural and professional investment in public transport operations**

Bus drivers have always managed public transport operations in Malta. The Government has never trained nor invested in the professional development of the staff in the various elements of the public transport operations. In terms of infrastructural investment the operators have always relied on government to provide the funding. After a seven-year struggle to come to an agreement about the acquisition of new buses and ticketing machines, the Government 'gave in' to the operators' requests and increased the subsidy for the purchase of new buses (of which the government now pays two-thirds of the cost price without any right of ownership).

Guaranteed earnings (subsidy) were introduced in 1995. This measure removed any incentive for the operators to improve the service, whilst it portrayed the government's apathy towards demanding improvements in the service. This could have been achieved in a number of ways, but was mostly addressed by requesting professional and technical management of public transport services. Patronage continued to decrease, while subsidy continued to rise, with much of the network running at a loss.

- **Funding problems**

The need for funds to implement projects was another prominent issue in the discussions. With other ongoing projects, the Government has already committed much of its finances for the coming years. With EU accession, on the other hand,

Malta will become a net recipient of EU funds such as, for example, in the case of the Trans-European Transport Networks, which will be funding parts of the upgrade of the road network in Malta. Funds allocated by Government to transport were always based on 'perceived' necessity rather than a plan, so that projects planned to improve public transport and reduce the number of cars entering the city of Valletta have been postponed in order to invest money in road maintenance projects. Such plans have included the upgrade of the Valletta bus terminus and the Valletta park-and-ride scheme. The problem with the current situation is that transport planning is never a priority in government agendas. Improvements to roads, however, are deemed major vote generators, and hence roads have always been a priority in government budgets.

Given their present status, transport projects will continue to be postponed and people will have to adapt to the problems of congestion, pollution and inefficient public transport. Public awareness, though, is increasing with the media making recurrent remarks about the state of the roads and public transport. These forces might not be on the same level as protest in some other countries, but they are certainly increasing the pressure on Government to act.

7.4 Conclusions

This chapter has outlined the problems of adopting a transport strategy in Malta, the third objective of this study. Being a small state, with an even smaller transport community, Malta provided the author with a chance to collect the views of most stakeholders, including the general public, through literature, interviews and public workshops. It also presented a holistic approach to policy analysis for all the institutions on a national scale. The problems identified in this chapter reflect the views of the author and the various people who participated in the debates. The

next chapter will conclude this study by suggesting ways of overcoming these problems with a view to the future of sustainable transport policy in Malta.

8.0 Conclusions

This concluding chapter summarises the key findings of this study and identifies ways of overcoming the problems of implementing a sustainable transport policy in Malta - the fifth objective of the study. It concludes by suggesting a way ahead for sustainable transport policy in small island states.

8.1 Summary of key findings

8.1.1 The origins and current state of Malta's transport problems

Over the past decade Malta has experienced steady economic growth and become one of the most car-dependent countries in Europe. As in other countries, such a high level of dependence on the private car has created problems of congestion, pollution, loss of natural habitat, threats to architectural heritage, danger (especially to those not in cars) and social exclusion.

The development of land transport in Malta has been marked by a more or less continuous increase in the supply of road infrastructure for the ever-increasing demands by motorists. The institutional structures for transport have also changed over time, giving rise to administrative instability and lack of long-term planning. The results of such a strategy are today an extensive road network, a declining public transport infrastructure and increasing costs associated with transport externalities.

Since Malta became a member of the European Union in 2004 it has been constrained to seek solutions to these problems within the context of EU

policies and EU Directives. Most importantly it is required to seek to achieve the objectives of a 'sustainable' transport system.

8.1.2 Sustainability and the EU context

Both the present situation and future trends in Malta would appear to be environmentally unsustainable. Although Malta's contribution to global CO_2 emissions and its drain on world energy supplies in absolute terms are insignificant in a global context, this is not true in per capita terms, and Malta is expected to play its part in the EU campaign to make transport less unsustainable.

A prominent theme of EU proclamations on the subject of transport is 'sustainability'. This is a term that up until now has eluded a consensual definition. There is, however, growing agreement about the trends that are unsustainable. Many countries have recognised the negative impacts of transport and institutions such as the European Union and the European Conference of Ministers of Transport have changed their policy discourse to try to reduce such impacts. Even public opinion seems to be in favour of 'sustainability', with a stated preference for the adoption of 'environmentally friendly' measures.

Two major concerns for the EU are internalisation of transport costs and modal shift. There is a consensus on the need for a price structure and the need for a Community framework that reflects the transport costs (as suggested by the EU White Paper European Transport Policy for 2010: Time to Decide). Despite decades of trying, economists, including EU economists, have failed to agree on a method for attaching monetary values to the 'true' cost of motoring, including social costs. This study reviewed the various attempts at calculating the external costs of transport; however, the lack of consensus has hindered the implementation of the EU White Paper objective to internalise all transport costs.

In tackling modal shift, the EU policy applicability to passenger transport on land in Malta focuses on the need to shift car users to public transport. European public transport administrative structures with have been discussed, including through particular case studies to suggest ways of improving the current unsustainable public transport practices in Malta.

8.1.3 A transport policy for Malta

Malta is now committed to making its transport policies conform to EU policies and directives. Most EU transport policies, however, are inconsistent with and contradictory to the sustainability claims made by the same EU. Others are widely disregarded by many countries, which refuse to adopt and implement unpopular policies.

Within this framework, and given the current unsustainable trends of car dependence, a policy for land transport in Malta has been presented. This policy would:

- increase the costs of private motorists, not based strictly on contentious calculations of externalities but on the policy objective of reducing the use of private mobility and shifting demand to improved public transport;
- increase the safety of the road infrastructure for all users whilst promoting walking and cycling;
- improve urban transport by controlling traffic through towns;
- integrate land use and transport planning; and
- improve research, monitoring and enforcement of policy measures for the purpose of education, whilst increasing awareness of improvements in transport.

Within this context, three priority areas were considered. First, car use restriction measures were proposed, with particular attention to the Valletta peninsula. Second, the improvement of the public transport services was

proposed, with a new model of operations and a new structure for bus services in Malta. Third, measures to integrate land use and transport and introduce Workplace Travel Plans to achieve such objective were advocated.

8.1.4 Problems to be overcome

A sociological institutional approach to the analysis of discourse and stakeholder inter-relationships has identified deeply entrenched attitudes, both amongst the public and government, that are driving transport policy in an environmentally unsustainable and socially damaging direction. This threatens to be compounded by the financial support of the European Union, which provides funds primarily to improve the road infrastructure and cater for the increasing growth in car traffic.

Despite the few stakeholders who support a change in policy towards more environmental sustainability, a list of obstacles has been identified in the path towards change. These are:

- a majority of the public that strongly favours the car (high status associated with the car);
- a Government whose response seeks to accommodate this majority without proper commitment to organisational efficiency and appropriate funding;
- a culture which is oblivious to the benefits of public transport, walking and cycling (mainly through lack of proper information);
- a bus industry with strong political influence and long-established inefficient practices; and
- a shortage of qualified planners capable of explaining the consequences of present trends and devising attractive alternatives.

The absence of a transport strategy has coincided with growing population pressures and limited resources. This is resulting in transport problems which are far more extreme than previously observed in Malta. The transport policy

needs to be made explicit. Also, if the adverse ecological and social impacts of transport are to be reduced, the discourse must be institutionalised within policy and cultural communities. Malta is a small country so policy, at all levels, should be retained within a national strategic framework.

8.2 Overcoming the problems of implementation in Malta

With increasing pressure on Government to take action over the present state of land transport in Malta, there is a need for change. There seems, at least in some parts of the overall discourse, a consensus for change among stakeholders within various policy arenas. Better public transport and safer road infrastructure are among the priorities desired, according to public opinion surveys and public meetings. While they are as yet unaware of how these targets will be achieved, it will be up to the policy makers to advertise the reasons for change. This can be achieved in three ways:

- the goals of transport policy will have to be made explicit;
- the reasons for such goals must be clear and transparent; and
- the negative and positive outcomes of policy instruments must be presented in support of these goals.

The transition process is likely to be extremely difficult and much resisted. The two important elements required to implement 'hard' policies are a great deal of political will and, almost as a consequence, an aware, educated and supportive electorate (Marshall 1994). Planners and policy makers will have to engage in new relations with different stakeholders and invoke more public debate. Trying to implement financial/fiscal policies will be even more difficult because of the mistrust between the people and the state.

The government needs to capitalise on moments when public opinion is in favour of a change by proposing and implementing a policy strategy. The introduction of restrictive policies and environmental improvements, which

may in some cases be supported by better provision of public transport services, will increase the chances of success. Elements of the strategy could be phased in with the 'sticks' of restrictions on car travel followed by the 'carrots' of improved alternatives.

Unpopular measures can be made popular if one dampens the negative effects with the positive impacts of an action. Prioritising issues and comprehensive information are key elements. Some of the social costs of increased mobility, especially by car, are that neighbourhoods are increasingly becoming unknown, children are not allowed to play in the streets and the sense of community is lost. Therefore, pushing forward the idea of safe neighbourhoods and safe streets might be a very good marketing tool for the introduction of traffic management schemes within a village. Giving people priority might be the right approach for governments to implement 'unpopular' measures. The presentation of policy is therefore very important, whilst involving the public would not only increase their awareness but would also make them participants in its success.

Public transport is seen by many (public and politicians) as the priority for achieving 'sustainable' mobility. Changes in bus operations and services will start to improve the only alternative currently available for Malta. Further investment in professional training and infrastructure will ensure the system is efficient and sustainable in the long term. Awareness of environmental impacts of increased car use will also play an important part in promoting public transport use.

The Government will have to accept the need for improved public transport, particularly to cater for an ageing population who will become increasingly dependent on public transport. Aesthetic improvements to the service are important, but efficiency is the main priority. Therefore, efforts should go into properly planned routes, adequate stops, a customer-oriented service and bus priority. Initially, however, the authorities should decide on servicing the

existing demand and set up proper administrative structures to regulate them. This in turn will influence both the plan of action and the finances to implement the necessary change.

A successful strategy is obtained by having professional transport planners across institutions, pursuing the same goals. The size of the policy arena plays a very important role in the adoption of policy. A major advantage for Malta is the small size and the centralisation of transport regulation. An equally important measure, however, is the training of transport professionals to improve integrated transport planning practices in Malta.

In conclusion, there are already indications that stakeholders are in favour of a better environment and are willing to reduce car use, if provided with a better alternative. Politicians and policy makers should not underestimate public opinion. The decision to include the public in the debates over sustainable transport is very important and could in turn be utilised to generate support for more 'sustainable' policies.

8.3 The way ahead

Malta is a small island nation, ideally placed by virtue of its size and isolation to become a beacon of 'sustainable' surface transport. This study, however, has put forward a comprehensive illustration of the difficulties of making policy work, even in a small state.

There are some aspects of island states that are unique. The society, economy and, to a certain extent, politics influence decisions. The smaller the island, the more closely knit is the population. Planning practices therefore impact on small, but locally very powerful, interest groups. However, it was evident from this study that island states' transport systems are not affected by their

geographic status but by economic development, car dependence and prevailing attitudes towards the use of alternative transport – problems which are common to many countries, not just island states. These problems, and the discourse identified in Malta, make this study a relevant contribution to the understanding of processes involved in the formulation of transport policy.

The emerging consensus in the EU on the need for 'sustainable' mobility is contradictory to the trends and forecasts, all pointing at further car dependence and growth in mobility. Overturning these trends for Malta will depend on the development of a consensus that the policy presented in section 8.1.3 above will improve the quality of life for most inhabitants.

Finally, a problem noted but not resolved by this thesis is Malta's dependence on the tourism industry, which globally is one of the fastest growing consumers of energy and producers of CO_2. GDP has grown in line with the increase in tourism in the islands. Air travel is considered the leading threat to the environment, and as yet the problems of tourism and sustainability remain unexplored for Malta. The energy consumption related to tourism is very high, not only in terms of use on land (such as electricity generation by burning fuel oil and water extraction from the sea), but also in terms of the distance travelled by air to reach the destination. Despite the knowledge that such economic development is unsustainable, subsequent governments have chosen not to openly discuss these issues. Raising the issue of sustainable land transport in this study will hopefully lead to future research on the sustainability of increased air travel for small islands.

Epilogue

This study was completed before Malta's accession to the European Union. In May 2004, together with nine other candidate countries of the Mediterranean and Eastern Europe, Malta became a full member of the EU.

It is worth briefly discussing how membership is already affecting land transport in Malta. The early signs are not encouraging. In this study the hope has been expressed that the European Union will bring about change, both in regulation but more importantly in attitudes towards policy. However, it is evident that the EU member states are all continuing to show signs of increasing dependence on the car, despite the Commission's claim to be in favour of 'sustainable' mobility (Transport White Paper 2010).

In Malta some of the measures introduced through the *Acquis* have been well received, such as the continuous pressures from Brussels to improve Road Safety. These have resulted in more Government commitment to improve accident data collection, adopt speed reduction measures and introduce legislation on the use of rear seat belts.

However, the tangible projects supported financially by the European Commission Structural Funds have focussed only on improvements to the road infrastructure, that is, the parts of the road network that were designated as the Trans-European Network (TEN). The idea of any road in Malta being considered part of the TEN is absurd. The fact that some roads in Malta have acquired this designation and associated funds highlights the gulf between EU rhetoric and current unsustainable practices.

Funds have been allocated for the works to start and strict deadlines have been set for completion. This emphasis on the improvement of the road infrastructure is clearly not in line with sustainability principles, which would encourage investment in other modes of transport. Currently Malta requires heavy investment in both its public transport and infrastructure for pedestrians and cyclists. The obligations concerning the Structural Funds are such that a lot of effort and resources are going into the use of such funds on road projects with nothing left for other improvements.

For many years road projects have been a priority for governments in Malta. The pressures from the EU to spend even more money on roads are not helping to change attitudes towards investment in environmentally benign modes.

Up until now the major impact of EU policy has been to encourage further dependence on the car – in Malta and throughout the EU. Unless, and until, the EU supports its professed commitment to sustainable transport with measures that discourage car use and encourage socially and environmentally benign modes of travel, it will continue to promote unsustainability.

M. Attard
20.10.05

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Appendix I

Capital expenditure by year by the former Roads Department on major road construction projects.

Source: Transport Planning Unit, 2001.

Description	Capital Expenditure in LM										
	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	Total cost of project
Msida Flood Relief	109,204	92,999	151,282	149,584	89,973	-	-	-	-	-	593,042
Marsa/Qormi Flood Relief	78,026	121,433	149,228	186,117	44,818						579,622
Marsa/Msida Link	-	602,797	2,091,857	2,049,439	-	-	-	-	-	-	4,744,093
Airport approach roads	-	-	659,570	239,854	-	-	-	-	-	-	899,424
Tal-Qroqq Junction	-	-	-	-	381	536,157	997,175	1,186,574	137,810	229,601	3,087698
Road Restoration Project	-	-	-	-	-	-	1,500,827	169,811	469,957	589,526	2,730,121
Msida Bridge/Hamrun Bypass	26,255	-	-	-	-	-	-	-	-	-	26,255
Marfa/Cirkewwa Road	118,628	-	-	-	-	-	-	-	-	-	118,628
Blata l-Bajda Underpass	28,218	-	-	-	-	-	-	-	-	-	28,218
Improvements to Marsa Cross	-	28,631	-	-	-	-	-	-	-	-	28,631
Cirkewwa Terminal Road	-	-	-	14,632	70,237	-	-	-	-	-	84,869
Mosta-Qormi Underground Gallery	-	-	-	-	31,024	-	-	-	-	-	31,024
San Gwann Industrial Estate Link	-	-	-	-	-	7,643	-	-	-	-	7,643
Regional Road/Sliema Junction	-	-	-	-	-	-	46,280	-	-	-	46,280
Total Expenditure per Year in million Euro	**12.3**	**13.2**	**12.3**	**13.8**	**7.6**	**10.2**	**13.4**	**14.9**	**9.6**	**8.7**	

Appendix II

External costs of transport in Malta (urban transport)

Vehicle usage data are estimates of the Malta Transport Authority for the year 2000.

Passenger Cars

Cost Category	Petrol Car in €c/vkm (CE 1999)	Total annual vkm of Petrol Cars in Malta (2000)	Total Cost for Malta in mio €	Diesel Car in €c/vkm (CE 1999)	Total annual vkm of Diesel Cars in Malta (2000)	Total Cost for Malta in mio €	**Total Passenger Car costs in mio €**
Accidents	2.7	1,359,765,000	36.7	2.7	342,342,000	9.2	**45.9**
Air Pollution	0.5	1,359,765,000	6.8	2.9	342,342,000	9.9	**16.7**
Climate Change	1.3	1,359,765,000	17.7	1.1	342,342,000	3.8	**21.5**
Noise	0.2*	1,359,765,000	2.7	0.2*	342,342,000	0.7	**3.4**
Infrastructure	1.7	1,359,765,000	23.1	1.7	342,342,000	5.8	**28.9**

* represents lower value taken from UNITE (2003) estimates due to other noise generated by the construction industry and religious celebrations.

Buses

Cost Category	Diesel Bus in €c/vkm (Infras 2000)	Total annual vkm for Public Transport in Malta (2000)	**Total Bus costs in mio €**
Accidents	8.0	16,890,000	**1.3**
Air Pollution	38.0	16,890,000	**6.4**
Climate Change	17.0	16,890,000	**2.9**
Noise	111.0	16,890,000	**18.7**
Infrastructure	-	16,890,000	-

Lorries

Cost Category	Light Lorry in €c/vkm (CE 1999)	Total annual vkm of Light Lorries in Malta (2000)	Total Cost for Malta in mio €	Heavy Lorry in €c/vkm (CE 1999)	Total annual vkm of Heavy Lorries in Malta (2000)	Total Cost for Malta in mio €	**Total Lorries costs in mio €**
Accidents	10.4	418,539,000	43.5	7.8	43,274,000	3.4	**46.9**
Air Pollution	7.6	418,539,000	31.8	43.6	43,274,000	18.9	**50.7**
Climate Change	2.4	418,539,000	10.0	8.0	43,274,000	3.5	**13.5**
Noise	4.0	418,539,000	16.7	13.4	43,274,000	5.8	**22.5**
Infrastructure	2.3	418,539,000	9.6	10.1	43,274,000	4.4	**14.0**

Appendix III

Uniqueness of island states – a negative finding

At the beginning of this study, it was intended to use Malta as an exemplar of the transport problems of small island states. This ambition has been largely frustrated. Those commonalities that were found between islands, had little to do with the states' small island status, and much more to do with their level of economic development, their level of dependence on the car, and prevailing attitudes toward the car and alternatives to it. This concludes that Malta's transport problems cannot be confined to island states.

Literature on transport research comparing small island states is very limited. On the other hand extensive literature exists for individual island states, for example Hong Kong (Cullinane 2003; Hau 1989) and Singapore (Goh 2002; Pacudan 1997; Seik 1997; 1998; 2000). Five islands were selected for a comparative review of their land transport systems; Malta, Cyprus, Mauritius, Cuba and Singapore. The scope of this review was to explore the uniqueness of island states and their special transport conditions set within a limited land space and special socio-economic conditions. Table 1 represents key transport indicators for the five islands.

Even though every effort has been made to use data that are comparable across countries, different methods of defining and collecting data may cause distortions.

Table 1. Indicators for five island states – data ranges between 1998 and 2000. Sources: National Statistics Office, 2001a; Statistical Service (Cyprus), 2002; Enoch, 2003; Enoch and Warren, 2003; CIA, 2002.

Indicator	Malta	Cyprus	Mauritius	Cuba	Singapore
Population density (pers/sq km)	1,240	82	624	100	6,050
Area (sq km)	316	9,250	2,040	110,860	693
Passenger vehicles per 1,000 population	465	340	39	16	123
Motor cycles per 1,000 population	31	57	37	16	48
Annual km per vehicle	9,000	-	9,554	-	1,864
Total passenger vehicles per km of road	83	23	104	3	105
Total road fatalities per 100,000 people	4	17	14	12	10
GDP per capita (EURO)	6,971	9,466	9,030	1,997	22,835
Percentage of GDP spent on road	0.38	8.78	-	-	11.5

There are marked differences between the five islands. The major differences to impact transport systems are probably the land area and population densities. Individual socio-political elements are not represented in this table. For example, out of the total area of Cyprus, 3,355 km² are the Turkish Cypriot territories. Data for these territories is not available.

Whilst Malta has the highest rate of motorization, the investment in road infrastructure is low compared to Singapore, which has a lower rate of motorization. This, though, could also be due to the marked difference in GDP

between Singapore and the rest of the islands in this review. In comparison, Singapore has a little more than double the area of Malta but a much greater population density and number of vehicles per kilometre of road. Despite this, the annual distance travelled by the average vehicle in Singapore is much less than that in Malta.

Cyprus, which is geographically closest to Malta, has a high rate of motorization with less vehicle density on the road. However, 19 per cent of the total land area in Cyprus is forested, whilst Malta is extensively covered by roads, even though the low investment spent on roads does not suggest that. The contrast is also evident between Cyprus and Mauritius where the two islands share a relatively similar GDP. Mauritius has a much higher population density and a much lower level of motorization but, because of its fewer roads, it has the highest number of vehicles per kilometre of road.

Cuba seems to be the most distinct from the other islands in question, with the largest area and the lowest population and vehicle densities. Despite this, it still has a relatively high rate of road fatalities compared to the other islands.

These indicators suggest that islands have particularly distinct identities and are very difficult to compare. Also, the data presented in Table 1 have excluded political influences and socio-cultural behaviours which influence certain patterns of development. For example, Singapore's efficiency in controlling car ownership could be explained by three underlying principles. These are:

- political continuity achieved by the same political party managing the country for three decades, following an autocratic political ideology;
- recognition of the importance of an appropriate institutional framework and effective management, including a meritocratic public service, training to supply qualified individuals, and attractive salary levels for the public sector;

- co-ordination and control by the Prime Minister and the Cabinet, placing an emphasis on the development and maintenance of strong inter-organisational connections, centrally directed policy and administrative integration (Pacudan 1997).

Apart from the controlled political environment, Singapore's success was mainly attributed to the high investment in transit and restraint of the car. Some describe this restraint as 'draconian' (for example, Grant 1998). In Malta's highly-contested democracy such measures would be more difficult to introduce. In Mauritius, like in most developing countries, the demand for transport has risen dramatically. Apart from the increase in population, income and urban sprawl, there has been an increase in commercial and industrial activity, partially caused by the Government's efforts to decrease reliance on the sugar cane industry by diversifying into other economic areas (Seewoo 1997).

In Cuba, at the National Congress meeting held in October 1997, the main transport measures proposed included upgrading the ports, improving the road network, improving freight transport and promoting the use of bicycles wherever possible. Due to a lack of oil importation, fuel deliveries to both state and private sectors were to be reduced by up to 80 per cent, tractor use was to be substituted with animal power (oxen and/or mules) and the employment policy was altered to encourage people to work closer to their homes. Energy rationing was to be achieved with a scheduled black-out programme and the part-time closure of some nickel processing and oil refining plants (Enoch and Warren 2003).

Transport in Malta, Cyprus and Mauritius is developing mostly along western lines, with Malta being the clear leader in terms of dependence on the car. However, in Singapore and Cuba – for very different reasons – dependence on the car is being severely constrained. Because of internal socio-political circumstances, transport

developments are unique to the individual islands. Only at a very general level can the transport problems of these five islands be considered common. In all of them economic growth is the driver behind increasing car ownership and political conditions are ensuring some form of control over the development of the transport systems. Policy therefore must be 'tailor-made' for the special circumstances of each individual island.

This appendix has attempted to find commonalties in the transport concerns of island states, only to be confronted with the fact that their differences greatly exceed their similarities and transport problems of island states are similar to other countries' problems.

Appendix IV

Public transport administrations

Table 1. Responsibility for Service Planning. Source: Colin Buchanan and Partners, 1998.

Country	Network	Timetable	Schedules
B	National	Operator	Operator
DK	Regional	Regional	Operator
D	Regional	Operator	Operator
E	Regional	Operator	Operator
Fin (Helsinki)	Regional	Regional	Operator
Fin (Elsewhere)	Operator	Operator	Operator
F	Regional	Operator	Operator
GR (Athens)	National	National	National
GR (Elsewhere)	Regional	Operator	Operator
IRL	Operator	Operator	Operator
I	National/Regional	Operator	Operator
L	National	National	National
NL	National	Operator	Operator
A	VV	VV	Operator
P	Operator	Operator	Operator
S	Regional	Regional	Regional
UK	Operator	Operator	Operator

Figure 1. Financial support for Member States. Source: Colin Buchanan and Partners, 1998.

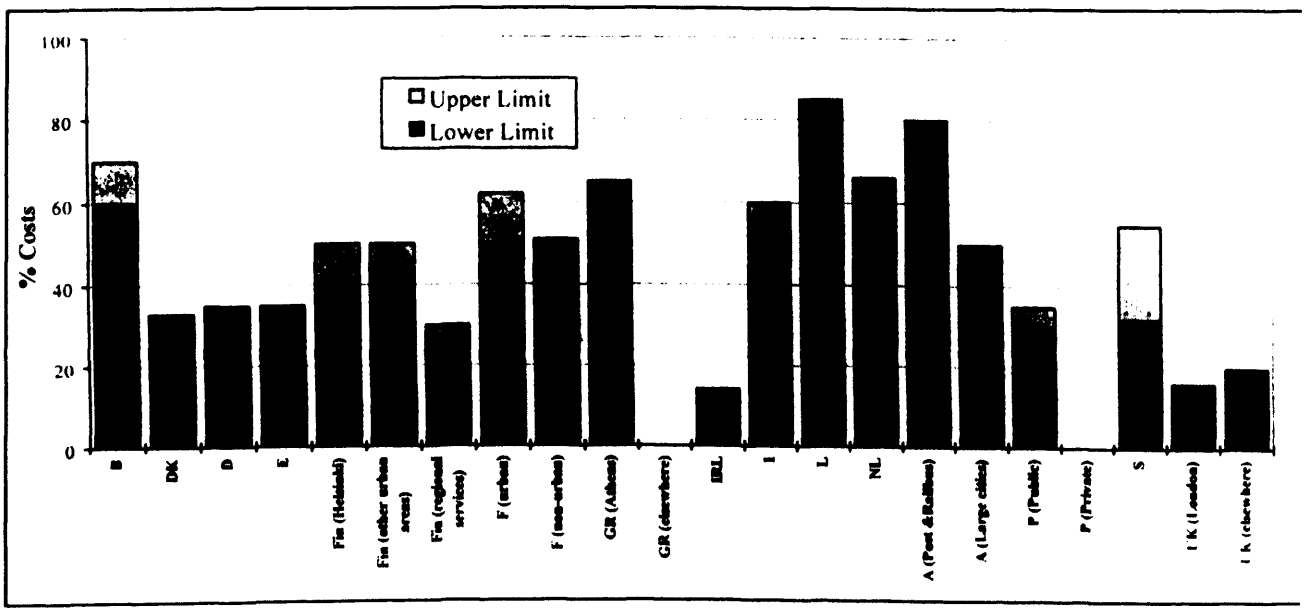

Table 2. Form and extent of Competition. Source: Colin Buchanan and Partners, 1998.

Country	Form of competition
B	None
DK	Extensive gross cost tendering
D	None but tendering planned
E	Public sector municipal monopolies
	Private sector tendering
FIN	Gross cost tendering in major urban areas
	Semi permanent licences elsewhere
F	Public monopoly in Paris
	Competitive tendering elsewhere (80% gross cost)
GR	None
IRL	Limited illegal on long distance services
I	Limited illegal only
L	None
NL	None
A	None
P	Limited illegal only
S	Extensive gross cost tendering
UK	Within London tendering
	Outside London on the road competition
	Northern Ireland no competition

Appendix V

List of locations of the Traffic Volume Surveys

Data Source: Transport Planning Unit, Malta Environment and Planning Authority.

Road/Street Name	Locality
Qormi Road	Hamrun
St. Joseph High Road	Hamrun
Rue D'Argens	Msida
Qui-si-sana	Sliema
Tower Road	Sliema
Borg Olivier Street	Sliema
Strand	Sliema
Industrial Estate Road	Zabbar
Ta' Xbiex Waterfront	Msida
St. Thomas Bay	Marsascala
St. Anthony Street	Mosta
Main Street	Mosta
Mdina Road	Mriehel
St. Joseph High Road	Sta. Venera
Canon Road	Sta. Venera
Sliema Road	Gzira
Gorg Borg Olivier Street	St. Julian's
Mikiel Anton Vassalli Str.	St. Julian's
Italian Mission Road	Kalkara
Imgieret Street	Zebbug
Mdina Road	Zebbug
Cospicua Road	Fgura
St. Ann Street	Floriana
Tony Camilleri Street	Burmarrad
Salini Road	Naxxar
Dun Karm Road	Birkirkara
Naxxar Road	Birkirkara
Marina Road	Msida
Industry Road	Mqabba
Guiseppe Garibaldi Str.	Marsa
Aviation Avenue	Luqa
Gudja Road	Gudja

Road/Street Name	Locality
Tal-Balal Road	San Gwann
Naxxar Road	San Gwann
Mikiel Anton Vassalli	Paceville
Hompesch Road	Zabbar
Mdina Road	Qormi
Manuel Dimech Street	Qormi
Regional Road	Msida
Hal Far Road	Hal Far
Barrani Road	Zejtun
Mdina Road	Attard
Salini Road	St. Paul's Bay
Council of Europe Str.	Luqa
New Street	Luqa
Mdina Road	Rabat
Zabbar Road	Marsascala
St. Anthony Street	Marsascala
Mosta Road	Mgarr
Luqa Road	Sta. Lucija
Ghajn Dwieli Road	Paola
Naxxar Road	Birkirkara
Birbal Street	Balzan
Qormi Road	Zebbug
Constitution Street	Mosta
Independence Avenue	Mosta
Rabat Road	Dingli
Psaila Street	Birkirkara

Appendix VI

The Interview Guide

Generic Questions for all Interviewees

1. State your name, qualification/professional status/experience and position held in which organisation and for how long have you been in this position.

2. Based on your experience, what do you think is **the focus of road transport** policy in Malta? Has the new Transport Authority brought the so much desired integration? Give examples of the measures implemented to supplement your answer. What was your contribution, if anything, to these policies?

3. From Map 1 - Traffic Volumes (arterial roads in the outer harbour regions total an average of 15,000 cars daily on a weekday and closer to the inner harbour region total an average of 25,000 cars, with a total of 32,000 cars closest to Valletta) most of the built-up areas have large concentrations of traffic on the arterial roads. This leads to **problems of congestion and pollution.** What measures are being introduced/adopted to control these volumes and the possible growth in traffic? OR maybe new road construction projects?

4. In most EU countries, especially in the UK, there is a strong will to **introduce restrictive measures on car use** (parking restrictions and high parking fees, pedestrianisation of centres). The most contentious issue is congestion charging. In Malta we have one such type of charging system, which is the V-licence for Valletta. If this is removed with the introduction of the park-and-ride or any other parking strategy, what will be the deterrent for anyone to visit Valletta by car?

5. Remaining on the same issue of **parking provision.** This government set up the Parking Committee to solve some of the parking problems in Malta's (and Gozo's, since the first project is being tested here) urban centres. Do you know what measures they are going to use and how (or if) this will affect your job/position? To what extent will an increase in parking availability effect road congestion / public transport usage / pollution (use whichever topic according to the interviewee?

6. In your opinion is the government improving **the public transport service** (by introducing new buses and a new ticketing system) to provide a better alternative to the car, increase patronage and hopefully decrease the subsidy (which will have to be revised once EU Commission Directives are in place)?

7. On the public transport issue, this map (showing the public transport profit and loss routes) provides evidence of the inefficiency of public transport. What (in your experience) should be the main measures adopted to reverse this pattern?

8. After hearing your opinion on public transport, I am providing you with some **information** (collected by the PA and presented here in map form - trip distribution maps and car use maps) for you to see what are the actual needs in terms of mobility of the population of some selected localities/regions. What are your reactions to/questions about them?

9. From the information provided above, I have drafted a **new structure for the public transport system** to change from the present one (show the map of the new public transport service, divided into 5 regions). This would provide the opportunity to create five hubs interconnected by a direct bus route (preferably either with a fixed route or dedicated bus lane on a major road) and provide bus services from each locality into a hub connected to another region's hub and the final destination, reducing travel time and the need to travel into Valletta for each bus trip. What are your reactions to this and what problems do you foresee in implementing such a system?

10. In what ways have you seen the Planning Authority contributing to the improvement of the road transport situation, given that you are the only body who has control over development and planning issues?

(a) Has there really been an **integration of land use and transport planning?**
(b) Some policies outlined in the 1990 Structure Plan are still not being implemented. Why? Are they to change?

(issues discussed only with Lucien Stafrace)

11. Lastly, you were quoted as saying that we need to "promote changes to our travel behaviour using better education campaigns to **encourage walking, cycling and use of public transport**" (September 2001). From your experience of educational campaigns, do you believe that these are enough to change travel behaviours? Aren't direct strategies more successful generally?
(issue discussed only with David Sutton)

Appendix VII

Trip Distribution for Employment, Shopping and Education Trips.

Data source: Malta Environment and Planning Authority, 1998. The author's own workings.

ORIGIN AND DESTINATION FOR EMPLOYMENT PURPOSES

Origin \ Destination	VALLETTA	MDINA	BIRGU	ISLA	BORMLA	QORMI	ZEBBUG	ZABBAR	SIGGIEWI	ZEJTUN	ATTARD	BALZAN	BIRKIRKARA	BIRZEBBUGIA	DINGLI	FGURA	FLORIANA	GUDJA
VALLETTA	703	0	15	31	15	122	0	76	0	31	15	92	183	107	15	61	321	31
MDINA	15	0	0	0	0	0	0	0	0	0	0	0	0	0	15	0	0	306
BIRGU	61	15	0	0	31	16	0	76	0	15	0	0	15	31	0	15	46	15
ISLA	107	0	0	31	0	0	0	0	15	31	15	0	31	31	0	0	76	46
BORMLA	122	0	0	0	92	46	31	76	0	122	31	0	15	0	15	15	61	0
QORMI	260	0	0	0	107	932	233	15	61	107	61	15	336	183	15	15	199	0
ZEBBUG	153	0	0	0	61	336	275	31	61	31	138	0	107	31	15	0	153	15
ZABBAR	183	0	46	31	367	31	31	764	0	474	46	0	138	183	0	107	214	15
SIGGIEWI	107	0	0	0	46	199	107	15	183	61	92	15	92	76	0	0	122	31
ZEJTUN	214	0	15	0	153	61	0	92	15	458	0	15	122	138	0	61	122	61
ATTARD	367	0	0	0	0	229	107	31	46	61	107	107	397	61	0	153	229	15
BALZAN	244	15	31	0	0	107	0	31	15	0	76	46	168	15	0	0	107	0
BIRKIRKARA	978	0	15	0	183	336	46	0	46	92	214	122	1482	31	31	31	535	46
BIRZEBBUGIA	183	0	31	31	92	31	0	61	15	168	31	0	92	321	0	76	107	76
DINGLI	107	0	0	0	31	15	15	0	15	0	61	0	107	15	92	15	31	0
FGURA	413	0	31	31	138	61	31	138	0	290	76	31	107	153	15	428	107	46
FLORIANA	306	0	15	0	31	61	0	0	0	0	15	0	46	15	0	46	153	0
GUDJA	92	0	0	0	61	31	15	0	31	61	31	15	15	31	0	15	46	76
GZIRA	260	0	0	0	76	46	0	0	0	46	15	46	199	31	0	0	122	0
GHARGHUR	92	0	0	0	31	0	0	0	15	0	0	0	61	0	0	0	61	0
GHAXAQ	76	0	15	0	15	0	0	0	0	107	15	0	15	61	0	46	0	46
HAMRUN	199	0	0	0	46	199	15	31	46	61	46	31	306	92	15	15	244	76
IKLIN	92	0	0	0	0	0	0	0	0	0	31	61	61	15	0	0	31	0
KALKARA	46	0	46	0	76	0	0	0	9	61	0	0	61	31	0	15	76	0
KIRKOP	46	0	15	0	31	0	0	0	0	15	0	0	15	31	0	0	46	31
LIJA	183	0	0	0	0	61	15	0	0	15	76	61	153	0	0	0	76	0
LUQA	138	0	0	0	46	214	15	0	0	92	46	15	46	76	0	15	153	61
MARSA	275	0	0	0	15	31	46	76	15	46	46	46	122	107	15	31	92	15
MARSASCALA	153	0	0	31	153	31	0	92	0	153	0	0	61	122	0	15	122	15
MARSAXLOKK	46	0	0	0	122	31	15	31	0	31	15	0	31	31	0	0	31	15
MELLIEHA	183	0	0	0	15	107	15	0	0	0	61	0	76	46	31	0	122	15
MGARR	61	0	0	0	0	15	15	0	0	15	76	15	15	15	0	0	31	0
MOSTA	443	0	0	0	76	122	92	0	0	61	244	92	306	46	15	0	229	61
MQABBA	31	0	0	0	31	15	0	0	0	61	46	0	0	15	0	0	76	0
MSIDA	183	0	0	31	46	92	15	31	15	92	46	0	183	15	0	31	260	0
NAXXAR	351	0	0	0	46	61	0	15	31	31	31	15	260	61	0	0	153	31
PAOLA	214	0	31	0	168	76	0	46	0	153	31	0	92	76	0	61	122	15
PEMBROKE	138	0	0	0	0	150	0	0	0	0	0	15	76	31	0	0	61	15
PIETA	306	0	0	0	46	76	15	0	0	76	46	0	92	15	0	0	92	31
QRENDI	107	0	0	15	61	31	0	0	0	46	15	0	46	15	0	0	15	15
RABAT	428	15	15	0	76	107	107	0	31	76	92	61	351	46	92	0	183	15
SAFI	92	0	0	0	76	0	15	0	0	31	15	0	15	0	15	0	61	0
ST. JULIAN'S	336	0	0	0	0	76	15	15	15	0	15	0	229	15	0	15	138	0
SAN GWANN	550	0	31	0	15	168	31	31	0	61	31	61	244	61	0	0	260	15
ST. PAUL'S BAY	61	0	0	0	15	31	0	31	15	15	0	46	229	46	0	0	107	15
STA. LUCIJA	138	0	15	0	76	0	15	15	0	76	31	31	46	92	0	0	61	15
STA. VENERA	214	0	0	0	0	122	46	0	31	31	46	0	260	31	0	0	138	0
SLIEMA	581	0	15	0	31	183	31	15	0	61	31	92	229	0	0	31	245	0
SWIEQI	229	0	0	0	0	107	0	0	0	31	15	31	15	0	0	76	61	0
TA' XBIEX	76	0	0	0	0	15	0	0	0	0	0	0	15	0	0	0	61	0
TARXIEN	290	0	15	0	138	76	46	76	0	153	15	0	92	61	0	92	199	76
XGHAJRA	0	0	15	0	0	15	0	15	0	0		0	0	15	0	0	31	0
ZURRIEQ	183	0	0	0	46	122	31	46	15	61	15	0	92	61	15	15	92	15
TOTAL	11416	45	412	232	2981	4994	1486	1972	741	3760	2201	1177	7547	2782	411	1496	6481	1372

		Destination																	
GZIRA	Origin	GHARGHUR	GHAXAQ	HAMRUN	IKLIN	KALKARA	KIRKOP	LIJA	LUQA	MARSA	MARSASCALA	MARSAXLOKK	MELLIEHA	MGARR	MOSTA	MQABBA	MSIDA	NAXXAR
76	VALLETTA	0	0	23	0	0	31	0	153	168	15	31	0	0	0	0	153	31
0	MDINA	0	0	15	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	BIRGU	0	0	46	0	61	0	0	61	61	0	0	31	0	0	0	0	0
15	ISLA	0	0	0	0	15	15	0	31	61	0	0	0	0	0	0	0	0
31	BORMLA	0	0	31	0	46	0	0	46	153	15	31	0	0	15	0	0	0
138	QORMI	15	0	122	0	46	46	46	336	520	15	0	0	0	92	31	61	61
31	ZEBBUG	0	0	31	0	31	31	31	168	260	31	46	15	0	31	0	46	46
107	ZABBAR	0	0	61	0	92	107	0	275	504	138	46	0	0	31	15	46	31
0	SIGGIEWI	0	0	76	0	0	15	0	92	153	0	0	0	0	61	0	61	15
61	ZEJTUN	0	15	107	0	61	76	46	122	489	107	15	0	0	31	0	76	0
46	ATTARD	0	0	92	15	31	31	61	138	275	0	0	46	15	153	0	199	76
61	BALZAN	0	0	46	61	0	15	0	0	183	0	0	15	0	61	0	107	0
153	BIRKIRKARA	15	0	336	31	46	61	61	275	458	31	0	15	15	244	0	306	183
15	BIRZEBBUGIA	0	15	76	0	15	92	0	183	153	61	61	15	0	15	46	31	15
0	DINGLI	0	0	76	0	0	0	15	15	61	0	0	15	0	76	0	0	15
0	FGURA	0	0	153	0	61	92	0	214	214	76	15	0	0	15	0	107	0
61	FLORIANA	0	0	31	0	0	0	15	31	122	15	0	0	0	46	31	76	15
15	GUDJA	0	0	46	0	0	31	0	31	76	15	15	15	0	15	0	15	0
183	GZIRA	0	0	183	0	0	15	46	107	92	0	0	15	0	15	0	138	0
31	GHARGHUR	46	0	0	0	0	0	0	31	31	0	0	0	15	31	0	0	46
0	GHAXAQ	0	138	15	0	15	15	0	92	92	15	31	0	0	0	0	0	0
92	HAMRUN	15	0	351	0	15	31	15	76	290	0	15	0	0	46	0	107	31
15	IKLIN	0	0	15	0	0	0	46	31	46	15	0	0	0	31	0	61	76
15	KALKARA	0	0	15	0	107	0	0	0	153	15	0	0	0	0	0	15	0
0	KIRKOP	0	0	15	0	0	122	0	46	31	0	0	0	0	0	0	0	0
31	LIJA	15	0	61	0	0	46	31	46	76	0	0	0	0	15	0	61	0
31	LUQA	15	15	107	0	31	46	0	244	321	15	0	0	0	15	31	15	0
46	MARSA	15	0	92	0	31	0	0	31	351	0	31	0	0	61	15	46	31
15	MARSASCALA	0	15	61	0	31	0	0	92	199	138	0	31	15	0	0	31	15
15	MARSAXLOKK	0	0	31	0	0	46	0	46	61	0	76	0	0	15	0	0	0
15	MELLIEHA	0	0	46	0	0	46	31	61	46	15	0	902	92	122	15	46	15
15	MGARR	0	0	31	0	0	15	122	15	46	0	0	122	306	138	0	0	31
168	MOSTA	0	0	275	0	15	107	122	61	244	15	0	92	46	947	15	214	290
0	MQABBA	0	0	0	0	0	92	0	122	92	15	0	0	0	0	31	46	0
92	MSIDA	0	0	15	0	0	15	15	76	275	0	0	31	15	122	0	290	0
15	NAXXAR	0	0	214	0	0	0	107	76	138	15	0	15	15	290	15	15	214
92	PAOLA	0	15	31	0	31	46	0	107	199	15	0	0	0	31	15	31	46
46	PEMBROKE	0	0	61	0	0	15	0	31	76	0	0	0	15	15	0	15	0
92	PIETA	0	0	244	0	0	46	15	138	153	0	15	15	15	76	0	107	0
15	QRENDI	0	0	0	0	0	0	0	46	107	0	0	15	0	31	46	15	0
46	RABAT	0	0	76	0	15	31	0	122	198	31	0	31	0	168	0	31	76
0	SAFI	0	0	0	0	0	122	0	15	61	15	15	15	0	0	15	0	0
183	ST. JULIAN'S	0	0	76	0	0	46	46	61	138	0	0	0	15	31	0	76	15
138	SAN GWANN	0	0	61	0	0	46	31	76	138	15	15	0	31	61	15	306	61
31	ST. PAUL'S BAY	0	0	76	31	0	15	0	15	260	0	0	214	76	122	0	46	92
31	STA. LUCIJA	0	0	15	0	0	31	0	0	46	15	0	0	0	31	0	46	15
76	STA. VENERA	0	0	168	0	0	15	15	61	92	0	15	46	0	31	15	46	46
336	SLIEMA	0	0	138	15	0	15	15	46	153	0	0	31	31	61	0	168	107
76	SWIEQI	0	0	31	0	0	15	15	76	122	0	0	31	0	15	0	76	15
61	TA' XBIEX	0	0	15	0	0	15	15	15	15	0	0	0	0	0	0	61	0
31	TARXIEN	0	0	139	0	46	61	0	31	306	0	0	0	0	15	0	76	31
0	XGHAJRA	0	0	0	0	15	0	0	15	31	15	0		0	0	0	0	0
0	ZURRIEQ	0	15	76	0	0	244	0	183	351	0	0	0	0	0	15	107	0
2843		136	228	4102	153	857	2002	962	4462	8941	883	473	1773	717	3422	366	3576	1741

		Destination																
PAOLA	Origin	PEMBROKE	PIETA	QRENDI	RABAT	SAFI	ST. JULIAN'S	SAN GWANN	ST. PAUL'S BAY	STA. LUCIJA	STA. VENERA	SLIEMA	SWIEQI	TA' XBIEX	TARXIEN	XGHAJRA	ZURRIEQ
122	VALLETTA	31	153	31	61	0	168	76	76	0	61	229	0	61	15	0	0
0	MDINA	0	0	0	0	0	15	15	0	0	0	0	0	0	0	0	0
15	BIRGU	0	15	0	0	0	0	0	15	0	0	46	0	0	0	0	0
76	ISLA	0	15	0	0	0	31	15	15	15	0	61	0	0	0	0	0
153	BORMLA	15	61	0	0	15	46	31	0	0	15	15	0	0	0	0	0
107	QORMI	0	122	0	31	0	31	138	76	0	76	214	0	15	15	0	31
76	ZEBBUG	31	168	15	138	0	61	46	138	15	15	15	0	0	0	0	15
290	ZABBAR	31	153	0	31	46	122	76	31	0	61	138	0	46	61	0	15
15	SIGGIEWI	0	168	0	76	0	15	61	31	0	31	46	0	15	15	0	15
168	ZEJTUN	0	183	0	31	0	61	61	15	0	31	76	15	15	31	0	15
31	ATTARD	31	92	0	107	15	122	76	168	0	153	153	31	31	0	0	0
46	BALZAN	15	46	0	31	15	15	76	46	0	15	92	0	0	0	0	0
92	BIRKIRKARA	46	229	0	153	0	214	382	840	0	244	397	15	76	15	0	0
122	BIRZEBBUGIA	0	61	15	0	31	0	0	15	0	46	46	0	0	46	0	31
0	DINGLI	0	46	15	138	0	61	76	61	0	0	15	0	15	0	0	15
382	FGURA	0	107	0	15	15	46	92	46	0	31	76	15	15	61	0	0
107	FLORIANA	0	0	0	0	0	61	31	15	0	76	92	0	0	31	0	15
15	GUDJA	0	31	15	0	0	15	15	15	0	0	15	0	0	15	0	15
31	GZIRA	15	76	0	15	0	153	107	31	31	92	290	15	92	0	0	0
15	GHARGHUR	0	31	0	15	0	15	46	31	0	15	46	0	15	0	0	0
15	GHAXAQ	0	46	0	15	0	15	31	0	0	0	15	0	0	0	0	0
107	HAMRUN	0	229	0	15	31	61	183	15	0	15	153	0	46	15	0	31
15	IKLIN	15	61	0	0	0	0	31	31	0	31	107	0	0	0	0	0
31	KALKARA	0	15	0	15	0	15	0	0	0	0	31	0	31	0	0	0
61	KIRKOP	0	15	15	15	15	0	0	0	0	0	46	15	0	15	0	15
15	LIJA	15	46	0	0	0	31	92	15	0	15	0	15	16	0	0	15
107	LUQA	0	168	15	0	76	31	15	0	0	15	0	0	0	15	0	92
168	MARSA	0	61	15	31	15	31	61	31	0	92	76	15	31	31	0	31
122	MARSASCALA	0	46	0	0	0	31	61	0	0	0	46	0	15	0	0	0
76	MARSAXLOKK	0	92	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15	MELLIEHA	0	46	0	15	0	15	31	229	0	31	15	0	0	0	0	0
31	MGARR	15	31	0	31	0	15	61	168	15	31	61	0	0	0	0	0
61	MOSTA	15	153	0	76	31	122	183	519	0	122	107	46	15	0	0	15
31	MQABBA	0	15	0	0	0	31	0	15	15	0	0	0	15	0	0	31
76	MSIDA	46	122	0	15	0	107	138	92	15	92	320	46	76	0	0	15
15	NAXXAR	15	138	0	31	0	76	122	275	0	61	153	15	31	0	0	31
550	PAOLA	15	107	15	31	15	61	0	76	0	15	122	0	15	76	0	15
31	PEMBROKE	0	92	0	0	0	31	31	31	0	31	61	0	31	0	0	0
76	PIETA	15	122	0	15	0	92	61	76	0	107	76	15	15	0	0	0
46	QRENDI	0	31	61	15	0	15	0	0	0	0	31	0	0	0	0	15
46	RABAT	0	153	0	688	15	76	61	229	0	46	107	15	0	31	0	0
15	SAFI	0	15	0	0	0	0	31	0	0	0	61	0	0	0	0	31
107	ST. JULIAN'S	56	168	0	0	0	290	153	76	0	46	321	15	61	0	0	0
61	SAN GWANN	15	107	0	15	0	244	413	92	0	76	275	31	153	0	0	15
15	ST. PAUL'S BAY	15	92	0	92	92	92	92	963	0	31	61	15	46	31	0	0
92	STA. LUCIJA	0	76	0	0	0	15	15	46	15	15	76	0	0	61	0	0
46	STA. VENERA	0	92	0	0	0	15	31	76	0	15	153	46	31	0	0	0
107	SLIEMA	46	214	0	15	0	351	290	61	0	61	733	46	153	0	0	0
31	SWIEQI	15	15	0	15	0	122	61	46	0	76	305	61	15	15	0	46
0	TA' XBIEX	0	15	0	0	0	31	61	15	0	0	31	0	46	0	0	0
153	TARXIEN	0	153	15	15	0	0	31	15	0	15	76	0	0	214	0	0
31	XGHAJRA	0	15	0	0	0	0	15	0	0	0	15	0	0	0	0	0
122	ZURRIEQ	0	46	31	0	61	15	15	31	0	76	76	0	31	31	0	367
4338		513	4554	258	2002	488	3283	3790	4888	121	2077	5772	487	1269	840	0	932

ORIGIN AND DESTINATION FOR EDUCATION PURPOSES

Origin \ Destination	VALLETTA	MDINA	BIRGU	ISLA	BORMLA	QORMI	ZEBBUG	ZABBAR	SIGGIEWI	ZEJTUN	ATTARD	BALZAN	BIRKIRKARA	BIRZEBBUGIA	DINGLI	FGURA	FLORIANA	GUDJA	GZIRA
VALLETTA	107						46						15				31		15
MDINA																			
BIRGU	15		92		46														
ISLA	15		15		31	16													
BORMLA	15				138	15				15						15			
QORMI	76		15		107	535	107		31	15		46	290	15		15	46	15	15
ZEBBUG	46					122	214		15	15	92		183						31
ZABBAR	31		107		306			244		199	31			15		46	15		15
SIGGIEWI	31		31		31	31	107		46		15		61	15			15		15
ZEJTUN	46	31			107		15	15		413		46		15	15	31	31		
ATTARD			46		61	15	92			15	153	61	229		15		15		31
BALZAN	31			15	31		46				92	15	168		15		46		46
BIRKIRKARA	107		15		15	15	46			15	92	31	489				76		92
BIRZEBBUGIA	15				31			31		199			31	138					
DINGLI					15	31					183		107		46				
FGURA	46		46		183		15			107		15	31		15	15		15	
FLORIANA	46						15			31							46		
GUDJA										61			15	15		15	15	31	
GZIRA	46										15		31			15	15		46
GHARGHUR						31	15					31	46						15
GHAXAQ	15									76			15	15		15			
HAMRUN	76					92	15		15	31		31	122	15			46	15	31
IKLIN	15		15		61		15				76		107		31				15
KALKARA	15		15		15	15												31	
KIRKOP	15									15							15	15	15
LIJA	15						31					15	46		15				
LUQA	31		31			76				15			46		31	15			31
MARSA	31										15		15			46	15		15
MARSASCALA			122		122		15	61		31						31	31		
MARSAXLOKK					46	46				92			15				31		
MELLIEHA			15		15	122									15				15
MGARR	15					46	15				15	15					15		
MOSTA	92		61		46	153					46		290	15	46		31		15
MQABBA																	15		
MSIDA	76	15								199	31		46		46		76		31
NAXXAR	46		31		15	46	76				15	46	122		31		31		31
PAOLA	15				61	15				15		15	31		15	31	31		15
PEMBROKE	15		15			15							15						31
PIETA	46					31	15				15		31				15		46
QRENDI	15					15												15	
RABAT	15		15		15	31	15				46	15	107		61		15		46
SAFI	31									15									
ST. JULIAN'S	15		46		61	31	15						168		15		46		107
SAN GWANN	46		15		46						46	15	153				31		92
ST. PAUL'S BAY	15					61						15	46				31		
STA. LUCIJA					46					15									
STA. VENERA			46		15		15						92				15		15
SLIEMA	61		46		15		46				15	61	61				31		183
SWIEQI				15	92		31						15				15		92
TA' XBIEX						15						15							
TARXIEN	15		31		92							15	46	15			31		15
XGHAJRA					31														
ZURRIEQ	31		15		31	15							92	15	31		46		31
Total Trips	1435	46	886	30	1928	1635	1023	351	107	1588	994	503	3376	288	443	290	964	137	1193

Origin \ Destination	GHARGHUR	GHAXAQ	HAMRUN	IKLIN	KALKARA	KIRKOP	LIJA	LUQA	MARSA	MARSASCALA	MARSAXLOKK	MELLIEHA	MGARR	MOSTA	MQABBA	MSIDA	NAXXAR	PAOLA
VALLETTA			107					15	15			15				183	107	122
MDINA																		
BIRGU			122						15									31
ISLA									15							15		15
BORMLA			61		31				31	61		15		31		46		31
QORMI			321						31					46		214	107	107
ZEBBUG			138										15	21		168	31	138
ZABBAR			76		46		15		183	31						260	15	244
SIGGIEWI			199										15			229	31	31
ZEJTUN			46						61					31		107	15	229
ATTARD			168					15	15	15		31	76	61		474	61	
BALZAN			107				15						31	15		290	31	15
BIRKIRKARA			367		15		15	15	15				15	46		474	244	107
BIRZEBBUGIA			46								31					153	46	107
DINGLI																46	31	15
FGURA		31	229		15				15				31	31		351	76	397
FLORIANA			31				15	15		15						168	15	31
GUDJA		15	15		31			15	76					15		61	46	15
GZIRA	15							31		15						15		31
GHARGHUR	76												15	46		15	31	
GHAXAQ		61			15				31				15			61		61
HAMRUN			275					15	15				15	31		244	31	15
IKLIN			46				31							46		92	61	15
KALKARA			76		31				15							46	15	
KIRKOP					15	15										31	15	31
LIJA			31											76		122	107	31
LUQA			122			15		92						15		107		76
MARSA			153						31	107						76	15	46
MARSASCALA			31		15					92	15					138	31	61
MARSAXLOKK											15					76	31	92
MELLIEHA	61		15									244		61		15		
MGARR			15										153	92		92	31	46
MOSTA			46	15			15	15	31					504		520	199	46
MQABBA			46					31		15					46	31	15	46
MSIDA			15			15	15	15				474		15	15	443	138	31
NAXXAR	15		76	15							15		15	138		413	351	46
PAOLA			92					15	31	15		15		15		183	46	382
PEMBROKE			15									15		15		31		
PIETA			244				15		31					15		244	61	15
QRENDI			76			31		15	15							107	31	46
RABAT			92										15	31		351	31	76
SAFI								15	15							46		15
ST. JULIAN'S			76										31	31		229	31	
SAN GWANN			168					15	15				61	31		443	76	15
ST. PAUL'S BAY							46	15				15	31	92		168	76	31
STA. LUCIJA			31						15							107		92
STA. VENERA			214	15												76	15	15
SLIEMA			76				15	15					46			321	61	61
SWIEQI			46				15						46	46		260	46	
TA' XBIEX			61										31			122		31
TARXIEN			61		15				15							229	15	183
XGHAJRA																		
ZURRIEQ			183			15		31	107		15	15		15	15	275	76	122
Total Trips	167	107	4416	45	229	91	212	395	839	366	91	839	657	1612	76	8969	2491	3394

Origin \ Destination	PEMBROKE	PIETA	QRENDI	RABAT	SAFI	ST. JULIAN'S	SAN GWANN	ST. PAUL'S BAY	STA. LUCIJA	STA. VENERA	SLIEMA	SWIEQI	TA' XBIEX	TARXIEN	XGHAJRA	ZURRIEQ
VALLETTA						76		15			31	15		15		
MDINA																
BIRGU				15												15
ISLA				15												
BORMLA	31	15		31		15										
QORMI	15	92		46		31		15			31					
ZEBBUG		46		122						76	15					
ZABBAR		61		31			15		31		15			46		
SIGGIEWI		61		61		15				31	15			31		
ZEJTUN		46		31		15	15		15	15				153		
ATTARD	61	61		46	15	46	92			15	46		15			
BALZAN	46			15		76				15	31	15				
BIRKIRKARA	31	92		122		122	46			76	61	31	15	15		
BIRZEBBUGIA				46		31				15	15		15	92		4
DINGLI	15			122		31					15					
FGURA				31		31			61		46			92		
FLORIANA		31						15								
GUDJA										15				61		
GZIRA				15		107	15	31			199					
GHARGHUR	31			31							31	31				
GHAXAQ		15		31		15				15				76		1
HAMRUN		31		15			15			31	31	15				1
IKLIN						15	61				15					
KALKARA		15								15				15		
KIRKOP					46				46							
LIJA		15		61							31					
LUQA	15	61				15			15	15	15					
MARSA		31		31						15				15		
MARSASCALA	15	46				15								61		
MARSAXLOKK		15							15		15			15		2
MELLIEHA																
MGARR	122	46		15		31	31	15			15	61				1
MOSTA	122	92		76		92				92	61	61				
MQABBA	15		31						46		15					
MSIDA	61	122		15		46	31	31		46	153		15	15		
NAXXAR	92	61		46		46	46	46		15	15	61				
PAOLA				15				15	76	15				61		
PEMBROKE	107					61	61				61	15				
PIETA	31	107						31			46	15				
QRENDI		31	15	15							15			15		5
RABAT		61	15	550						31	15					
SAFI					31				61							5
ST. JULIAN'S	76				15	122	138				92	31	15	15		
SAN GWANN	15			31		107	229			31	92	31				
ST. PAUL'S BAY	92			31		15		122				15				
STA. LUCIJA				15		15								46		
STA. VENERA	15	61		76				31		107	15	15		15		
SLIEMA	46	31		31		76	107	15			15	31		31		
SWIEQI	107	15				61	107			15	153	46	31	14		
TA' XBIEX						31	15				15	31	15			
TARXIEN		15	15						61	46	31		15	122		
XGHAJRA																1
ZURRIEQ		31	15	31		15			92	31	15					11
Total Trips	1161	1407	91	1865	107	1374	1024	382	519	778	1482	520	136	1021		46

ORIGIN AND DESTINATION FOR SHOPPING PURPOSES

Destination

Origin	VALLETTA	MDINA	BIRGU	ISLA	BORMLA	QORMI	ZEBBUG	ZABBAR	SIGGIEWI	ZEJTUN	ATTARD	BALZAN	BIRKIRKARA	BIRZEBBUGIA	DINGLI	FGURA	FLORIANA	GUDJA	GZIRA
VALLETTA	290					61	15		15	15	31		92			31	46		
MDINA													15						
BIRGU	46		15		31			31								15			
ISLA	153			31				15											
BORMLA	122				92			15		15			15			15	15		31
QORMI	474					795	31				46	15	244			15	46		15
ZEBBUG	397					138	535		15		61		76				46		
ZABBAR	275		31			92		535		31	15		76			92	46		
SIGGIEWI	122					92	46	15	290				15						
ZEJTUN	275							61		718	15		15			61	15		
ATTARD	229					76	46				458	61	428				31		15
BALZAN	76										46	107	244						
BIRKIRKARA	504		15			76					61	107	1543	15		31			61
BIRZEBBUGIA	244				15					76			15	397		76	61		
DINGLI	76					15	31					15	15		92	31			
FGURA	275					31		107		92			61			382			31
FLORIANA	122					15					15		15			31	46		15
GUDJA	31							15								15		15	46
GZIRA	260					46				46			199				15		351
GHARGHUR	15										15		61						31
GHAXAQ	15									46	15		46					15	
HAMRUN	550					31	15			31			214	15		15	61	31	31
IKLIN	46						15					46	199						
KALKARA	107		15		15	31							15			31			
KIRKOP	76					15													
LIJA	46						31				61	31	306						
LUQA	183					92	15				31			15		46	15		
MARSA	229					76	15				15		46			46	46		31
MARSASCALA	92				31	46		107		15			31			46		15	31
MARSAXLOKK	31					15	31			76			15	15		31			
MELLIEHA	214										15		46						
MGARR							15												
MOSTA	306					31					15	15	336			15	15		
MQABBA	46															31			
MSIDA	244					76	31	15					275			15			46
NAXXAR	153					46	15					15	92						46
PAOLA	321		15		31	46		31					92			122	15		15
PEMBROKE	31												61						46
PIETA	336					31				15	15		168			31			61
QRENDI	15								31				15			15			
RABAT	244					31	15				46		107						15
SAFI	122																		
ST. JULIAN'S	168					15	15					15	153				46	15	15
SAN GWANN	214										31		244	31					46
ST. PAUL'S BAY	199					31	31				31		92						15
STA. LUCIJA	76					15	31						46			15			
STA. VENERA	183					15			15		46		260				15		76
SLIEMA	413					31			15		31		183				31		122
SWIEQI	31												168						15
TA' XBIEX	31												31						15
TARXIEN	229										15		61	15		76	31		
XGHAJRA	31							31		15						15			
ZURRIEQ	367					31							15			15			
Total Trips	9336		92	31	214	2139	978	978	382	1192	1131	428	6448	504	92	1360	642	92	1222

Origin \ Destination	GHARGHUR	GHAXAQ	HAMRUN	IKLIN	KALKARA	KIRKOP	LIJA	LUQA	MARSA	MARSASCALA	MARSAXLOKK	MELLIEHA	MGARR	MOSTA	MQABBA	MSIDA	NAXXAR	PAOLA	PEMBROKE
VALLETTA			76	15				15	31			31		15		31		61	
MDINA																			
BIRGU				46			15			46									
ISLA																		61	
BORMLA			31		15									15		15		61	
QORMI		15	92	15			76	15	107					31		76	15	46	
ZEBBUG			31	15			31		153		15						46	46	
ZABBAR			31					31	46	46								122	
SIGGIEWI			15						46							31			
ZEJTUN			92						76								31	76	
ATTARD			61				46							76				31	
BALZAN			31	15			31									31	31		
BIRKIRKARA			336	76			153	15	61					306		168	31	15	
BIRZEBBUGIA			61	15				15	46							31		46	
DINGLI			15				61	31				15							
FGURA			31				46							15		15		489	
FLORIANA			46				15	15	46					31				76	
GUDJA								15										61	
GZIRA			31						15					31		15		15	
GHARGHUR	76		15											46		15	61		
GHAXAQ		92	15												15			76	
HAMRUN	15	15	504	15					92	15				15		15		76	
IKLIN				76			122		31							15	15		
KALKARA					92									31					
KIRKOP			15			61								15		15		31	
LIJA			46				31		15			31		61		15	15	31	
LUQA			31				15	214	15	15				46				31	
MARSA			61					31	183	15				15		76	61		
MARSASCALA										153							31	31	
MARSAXLOKK									15		76							15	
MELLIEHA				15								367	15	61					
MGARR							15					15	107	107					
MOSTA			138				107	15	15			15		1008		46	61	31	
MQABBA									31						61				
MSIDA			76				15		46			15		61		229	15		
NAXXAR			76				46					15	15	122		61	306	31	15
PAOLA			61	15			15	31	46	15				46		46		581	
PEMBROKE																31			15
PIETA			153	31	15		15		15		31	15				61		15	
QRENDI														15				15	
RABAT			76	15			61							61		31			
SAFI						15			15							15		61	
ST. JULIAN'S			15				46		61							61	31	15	
SAN GWANN			15	31			92	15	15					46		183	31	15	
ST. PAUL'S BAY			31				15		61			31	46	260		15			
STA. LUCIJA							15	31										199	
STA. VENERA			199	15			61	15	15							31	15		
SLIEMA			76				31		31					46		138	31	31	46
SWIEQI			31						15					15		15	15	46	31
TA' XBIEX														46		31			
TARXIEN		15	15	15					15	15	15						31	306	
XGHAJRA																			
ZURRIEQ			15			15		31	61										
Total Trips	92	138	2643	428	122	92	1177	535	1421	321	138	550	183	2643	76	1559	871	2842	107

Destination

Origin	PIETA	QRENDI	RABAT	SAFI	ST. JULIAN'S	SAN GWANN	ST. PAUL'S BAY	STA. LUCIJA	STA. VENERA	SLIEMA	SWIEQI	TA' XBIEX	TARXIEN	XGHAJRA	ZURRIEQ
VALLETTA			46			31	15		15	46					15
MDINA			31				15								
BIRGU	15									31					
ISLA											15				
BORMLA	15									15					
QORMI	15					31	31		61				15		
ZEBBUG	15		15				61			46	15				
ZABBAR						15	15			31			15		
SIGGIEWI						15			31	31					
ZEJTUN	15		31	15						31			15		
ATTARD			31		15	46	31			61					
BALZAN	15					15	31			76					
BIRKIRKARA	15		15		15	153	15		107	199			15		
BIRZEBBUGIA	15		15							15					
DINGLI			153												
FGURA			46		15						15		31		
FLORIANA	31		15		15	31				31					
GUDJA															
GZIRA	31					31			15	24		15			
GHARGHUR						15					15				
GHAXAQ															
HAMRUN	92		15		15		15		31	46					
IKLIN						15			31						
KALKARA															
KIRKOP															46
LIJA						15			30.56	30.56					
LUQA						31				46					15
MARSA										76		31			
MARSASCALA						31			15						
MARSAXLOKK	15														
MELLIEHA						15	92	15		15					
MGARR	15					15	15								
MOSTA	31				15	46	138		15	61	15				
MQABBA															31
MSIDA	46				15	15				244		15			
NAXXAR	15					31	46		15	31	15				15
PAOLA			31			15			15	107			15		
PEMBROKE					15	15				31	15				
PIETA	107						31			46		15			15
QRENDI		138													46
RABAT			810		15	31	15		15	76					
SAFI				31											15
ST. JULIAN'S					199	183	15			199	15				
SAN GWANN			15			336	15			153	15				
ST. PAUL'S BAY							550			15	31	15			
STA. LUCIJA								31		15			31		
STA. VENERA					15	15			92	15					
SLIEMA					92	107	46		15	642		15			
SWIEQI					46	76	31		15	153	199				
TA' XBIEX							15			76					
TARXIEN									15	92			168		
XGHAJRA															
ZURRIEQ		31		15						76					336
Total Trips	504	168	1268	61	489	1375	1238	46	535	2881	367	107	306		535

Appendix VIII

Chronology of political programmes, Malta General Elections 1971-2003. Compiled by the author.

1971	Labour Party Electoral Manifesto	**Malta in Peace and Progress**
1971	Nationalist Party Electoral Manifesto	**The Fruits of Our Labour - We move further** The third development plan has already provided a total of €17.5 million (26% of the total expenditure in this sector) for this scope. The Nationalist Government has increased the telephone system both internally and international. The Nationalist Government also built miles of new and modern roads, necessary and impressive bridges. The Nationalist government will continue with this political agenda for Malta and Gozo.
1976	Labour Party Electoral Manifesto	**Towards a Socialist Malta - Progressing in Peace** After the great effort done to improve the transport network to the Grand Harbour, the airport and Ricasoli, the traffic situation has improved. The Labour Government will also improve the roads leading to the north of the island. Also improvements will be carried out on the roads leading to the beaches for Maltese and tourists. The agriculture sector will also be given some attention with regard to roads leading to agricultural areas.
1976	Nationalist Party Electoral Manifesto	**Let's build Anew** The nationalist government recognises the necessary reform in the public transport sector and this has given rise to an economic crisis in this sector, in the service, and for workmen and bus owners, without any improvements for the passengers. Therefore the Nationalist Government will 1. Set-up a Public Transport Authority with representatives from the government, the bus owners, the employees in the industry and the public. 2. Prepare to introduce a system whereby there would be more than one operator. 3. Introduce the possibility for a bus owner to transfer his bus/license to someone else.
1981	Labour Party Electoral Manifesto	**Towards Greater Well-being** No reference is made to any form of transport. There is a short reference to the environment, however, with "tree planting and new public gardens" and "legislation on bird-trapping and pollution of land and sea."
1981	Nationalist Party Electoral Manifesto	**Ripe for Change** Emphasis is placed, on communication between islands for passenger and goods. The setting up of a Transport Authority to coordinate the services of transport between the islands is proposed in this programme.

1986	The Action Council for Tourism	Signposting to ease tourists. It is proposed that a Tourist Transport Board is set up, responsible for regulating tourist transport, setting standards, rationalising the administration of policy and tourist transport and assisting in creating its radical improvements.
1987	Labour Party Electoral Manifesto	**With Labour, for Peace and Progress** Transport is mentioned in a very wide context here of progress and development of the island.
1987	Nationalist Party Electoral Manifesto	**Employment, Justice and Freedom: The Foundations for the Future** Criticisms of the Labour Government and a list of projects to be implemented, including: 1. Reconsider the measures taken in 1980 regarding the use of *Conference Lines* as the main company for import and export of products by sea from Malta. 2. Road Haulage by Maltese people to the continent would be more advantageous. 3. Examination of the internal transport system with all interested parties and the introduction of new services, such as regular transport services to all industrial estates. 4. Taxis should form an association whereby the workload from tourism is enough for a decent salary. Improve their working conditions as well as the conditions of the service.
1992	Labour Party Electoral Manifesto	**Together We Build Again** Reference is made to reducing the noise pollution caused by traffic. Traffic in urban areas will be controlled and each town and village will have the best public transport service.
1992	Nationalist Party Electoral Manifesto	**Solidarity Always and .... Everywhere** A promise to improve work on the roads up to the European levels. Also there is reference to a study which classified roads into arterial and distributor types. A computer model was built to see the changes in the network. From this it is evident that junctions should be improved. The profiles, materials and construction of roads should also be improved. Parking problems will also be tackled with practical solutions. Subsidies will be given to bus owners to change their buses.
1992	The Green Party (A.D.) Electoral Manifesto	**A Voice to the Unheard**
1996	Labour Party Electoral Manifesto	**The Citizen is First. A Vision for a Modern Malta** Methods of traffic management in village centres and improvements in the construction and maintenance of roads. The investment in roads and communication has not produced the necessary facilities and services. In public transport the situation has worsened. In this case the Labour Party will take a more active role, with the Local Councils, to improve the system and facilities by providing new routes for the new residential zones. There will be a revision of the operations of road construction and maintenance.

1996	Nationalist Party Electoral Manifesto	**PN Future** The Nationalist government will continue to reform the sector by 1. Introducing new buses 2. Introducing the new ticketing machines and the frequent travellers scheme 3. Upgrading the bus stops 4. Complete renovation of the main bus terminus in Valletta The plans should aim to encourage the commuter to use alternative means of transport. Therefore new plans will focus on: 1. The use of electric vans in the old historic centres 2. Introduction of new routes and a night service 3. Improved information regarding public transport 4. The viability of using ferry services in adjacent localities with sea in between 5. Incentives for Maltese and foreigners to use taxis, control over the taxi drivers, the rates and issuing of licences 6. In summer, the introduction of 'sea taxis' for localities near the sea or popular beaches. In these new modes of transport, the present operators will be given the chance to offer the service. In the sea transport sector, competition will be promoted. The changes proposed in the transport system will not solve the problems of traffic, caused by the amount of private cars on the road. The Nationalist Party is proposing that for the coming years the policy be centred around: 1. Promoting the building of car parks in strategic zones 2. Improvements in driving tests and the VRT 3. Encouraging pedestrianisation of village cores, accessing areas with electric cars 4. Introducing parking meters in zones where parking is a problem In terms of roads, the government will: 1. Improve the flow of traffic on both arterial and local roads 2. Improve the pedestrian environment 3. Introduce embellishment projects as a means of traffic management The arterial roads will be improved to completely eliminate the need to pass through village centres, through the building of new junctions and the reconstruction of main roads such as in St. Venera. There will also be funding to the local councils to build new roads, especially in new residential areas. There will be a change in the regulation which states that the building of a road is commissioned only when 90% of the building is ready, and centralisation of the services to be built under new roads. There will be a programme of installing pelican lights and traffic lights at junctions and streets for the safety and control of traffic and pedestrians. Improvements in tourism with better signage. Bridges or pedestrian subways will be constructed to reconnect communities split by main roads. Water reservoirs will be built for rainwater collection in order to use that water for drip irrigation in junctions and roundabouts.
1996	The Green Party (A.D.) Electoral Manifesto	**Environment, Clarity and Social Duty** Improvements in the schedules and quality of the bus service to reduce the pressure on our roads because of private traffic. Reduction of the registration tax on scooters and motorcycles.

1998	Labour Party Electoral Manifesto	**Solid Values, Modern Vision - The Citizen First** Reference is made to the fact that the Labour Government has resurfaced a number of roads (700), which is still not enough to provide for the country's transport needs. The Labour Government would continue with the same programme of construction and maintenance of roads, including in St. Venera, Qormi, the Freeport and other projects related to tourism such as in the areas of Bugibba, Sliema, Marsaxlokk and Birzebbugia. The introduction of VRT testing. In public transport the Labour Government, with the local councils, will continue to improve the service and build a new bus terminus in Valletta.
1998	Nationalist Party Electoral Manifesto	**Prosperity, Confidence and Direction** The Transport service must be improved. The reforms begun by the Nationalist Government must continue, with full dialogue that includes all transport operators. 1. We bring in new buses, and offer incentives to frequent users of the bus service. The Implementation of the changes planned by the previous Nationalist Government for the Terminus and better services will be introduced to service the historic centres. 2. A new Nationalist Government will implement a road-improvement programme, with the setting up of junctions at main arterial roads. A number of important roads will be built. 3. A new Nationalist Government will ensure that buses are kept in good condition. But the priority is that the roads themselves are maintained, so that the benefits of the Vehicle Roadworthiness Test are not lost as a result of the bad state of our roads. Vehicle Road-worthiness Testing will not be allowed to create unnecessary costs for drivers.
1998	The Green Party (A.D.) Electoral Manifesto	**Social Justice Movement (A.D.)** No reference is made to transport, just to sustainable development.
2003	Labour Party Electoral Manifesto	**A Better Future - The Citizen First** Reference is made to a list of policies the party aims at implementing: 1. Re-instatement of the co-ordinating unit for the maintenance of roads and services using road infrastructure. 2. Formulation of a National Strategy for Transport to increase efficiency in transport and improve the environment and the quality of life. 3. Public transport network will increase to have regional termini servicing the regions and act as a connection between regions. 4. In collaboration with the Local Councils adopt traffic management systems in town centres so that residents and pedestrians are given priority over cars. 5. Introduction of new parking systems. 6. Introduce new modes of transport and provide adequate protection to those using environmentally friendly modes of transport. 7. Implement projects which reduce land transport. 8. Investigate the possibilities of using innovative public transport, such as light rail.

		9. The transport infrastructure needs to radically change so as to limit the circulation of vehicles in the town centres. 10. The Roads Master Plan, commissioned under a Labour Government, will be given precedence and will be implemented within the time frames already established by the plan. 11. Solving the parking problem - park and ride. 12. Surfacing of un-surfaced residential roads in towns and villages. 13. Proposals for solutions and implementation of work for the improvement of roads and junctions to reduce congestion.
2003	Nationalist Party Electoral Manifesto	**YES PN Work Prosperity Resolve** 1. 30 kilometres of road will be constructed with the money obtained from Italy, under the new protocol signed after joining Europe. 2. 56 kilometres of arterial roads will be constructed or maintained with the structural funds from the EU between 2004-2006. 3. 100 local roads will still be maintained every year, as in the past four years. 4. Strengthen the co-ordination unit which deals with services (telephone, water and electricity) with more participation from Local Councils. 5. More roads will be lit with appropriate lighting. 6. Government will ensure quality of work on the roads. 7. Park and ride for Floriana/Valletta. 8. Continuing replacement of fleet and the introduction of night buses with the central terminus in Paceville.
2003	The Green Party (A.D.) Electoral Manifesto	**A New Breath of Fresh Air - The Green Party** Priority is given to pedestrians and people using public transport. To this end a list of reforms are suggested. 1. Increase in pedestrian zones in commercial and town centres. 2. Increased accessibility of roads to persons with disabilities, elderly and parents with young children. 3. Public transport sector should be liberalised. At the same time, the government must ensure the service satisfies the demand in terms of routes, frequency and schedules. Service should be provided till 11:00pm. There should also be a night bus service. 4. Buses should use alternative fuels. 5. Seasonal bus services to the countryside in winter and beaches in summer. 6. The Valletta terminus system is outdated and a new system should include other termini. 7. Termini should be provided with information on the services and shelter. 8. Termini should also be provided with proper facilities to receive customer complaints, providing facilities for drivers between journeys and each bus shelter should have information on bus arrival times. 9. Alternative transport by sea, especially within the ports, though not exclusively. 10. The Taxi sector should be fully liberalised. 11. More park and ride systems introduced to limit congestion. 12. Residents should be given priority for parking. 13. Bus lanes should be introduced where the roads are wide enough.

		14. Road maintenance and construction should be of higher quality for durability. This process should include sign posting and lighting. 15. Roads should be built not to retain storm water, but collect it. 16. New developments should follow infrastructural work on the building of roads. 17. Revenues from vehicle registration tax and licence fees need to be invested in infrastructural work. 18. Heavy vehicles should be controlled to minimise the impact on road surfaces. 19. VRT test should include emissions testing and noise. 20. Leaded petrol should be removed from the market. 21. Alternative fuelled cars, small engine vehicles and motorcycles (less than 125cc) should be promoted by fiscal measures. This could include using electric buses. 22. EU Compliance Certificate should also be applied to second hand vehicles. 23. Every tax on bicycles should be removed and bike lanes created where possible.